PRINCIPLES OF DRAMA-THERAPY

STEPHEN F. AUSTIN

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Principles of Drama-Therapy

by

Stephen F. Austin, B. A.

A Handbook for Dramatists, Dealing with the Possibilities of Suggestion and the Mass Mind

Serere Ne Dubites

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To
My Mother

. . . all things . . . are at the mercy of a new generalization. Generalization is always a new influx of the divinity into the mind. Hence the thrill that attends it.

—Emerson.

Since these things are so, and since tremendous power lies occluded within the popular mind, may not America, with her genius for things practical, harness such unseen Niagaras—to the general well-being of mankind? In doing so she would have revivified a theater that is already obsolescent, and would have created a truly American drama, based upon truly American ideals.

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FOREWORD

In approaching the subject matter of the present volume the author is beset at once with many difficulties of exposition. The conception with which it deals is still young and so far as the general reader is concerned there is little or no body of past experience to which appeal may be made by way of illustration. Since this is the case, and since in the subsequent pages abstract reasoning must play a considerable part, it is best at once to define our terms and briefly to state the question. What then is meant by *drama-therapy?*

Therapy is derived from a Greek word meaning *to heal* or *to cure,* and in its present form implies *the art or science of healing.* It most frequently occurs, however, in connection with some modifying term. This is true in the case of the word, *psycho-therapy; psycho* being another Greek derivative meaning *soul. Psycho-therapy,* therefore, means *the art or science of soul-healing,* or preferably, *the art or science of healing by means, or through the instrumentality, of the soul.* It is today a recognized branch of medical practice and as such is being employed in many of our leading hospitals.

By analogy the term, *drama-therapy,* which the author has been forced to coin to cover a new idea and which he offers only in lieu of something bet-

ter, would denote *the art or science of healing by means, or through the instrumentality, of the drama,* or, *by means, or through the instrumentality, of dramatic presentation.*

It is his purpose in the following pages to point out certain relations existing between audience and stage which, after careful consideration, would appear to render such an art or such a science as drama-therapy something more than a mere dream. In them the subject is dealt with in as much detail as is consonant with clearness and with the findings of scientific inquiry; and if the reader will follow the argument carefully, with a mind unwarped by preconceived ideas, the chances are he will find that a curative drama is not only a present possibility, but that it presupposes, also, only a mere extension in the application of known laws. He will find, moreover, that these laws themselves, as well as their extended application through the medium of the stage, are understandable and simple in the extreme. And if these findings be sound, and if the amelioration even of the most minor disorders can, in very fact, be made an appanage of authorship, it is at once apparent that the subject of drama-therapy is of prime importance, not only to the writer and to all branches of the theatrical profession, but to the general public as well.

It is because of such considerations that the

author commends the contents of the present volume to the thoughtful attention of the reader.

Before closing these preliminary remarks there is another point that deserves mention: since the inception of this book a number of writers have begun working definitely for the goal herein indicated. These men and women, assembled in the first instance by a sympathy of aims and ideals, have, for purposes of practical co-operation in the creation and disposal of their work, banded together into a literary fraternity, styling themselves *Sopherim*. This society invites correspondence with all creative workers, literary or otherwise, who feel an interest in the aims expressed in this volume.

THE AUTHOR,
New York,
January 1, 1917.

The Bramhall Playhouse,
138 East 27th Street.

CHAPTER I

The Factors of Personality

THERE is today a formidable array of volumes dealing with the drama, but, although the delineation of human character is the one aim of the dramatic art, few writers upon the subject have devoted any great amount of space to the consideration of the one fundamental factor—that is, to human personality itself. This basic error the present volume hopes to avoid by considering briefly, first, the factor of personality as it appears in the individual; secondly, the factor of personality as it appears in the group; and finally, after moderately definite ideas in regard to personality itself have been formulated, to deduce a method by which these ideas may find practical application in dramatic composition. Approached in this manner the chances are that a discussion of the laws of dramaturgy will lead us into most interesting fields.

If the reader were asked to define human personality he would probably reply that it consists of body and mind; and his definition would be perfectly right as far as it goes, the only trouble being that it does not go deep enough. Let us, then, examine these two component parts of personality and see whether or not they may not be subjected to further analysis.

The body has always been easily available for study, and today we are fairly well acquainted with its composition, structure and functioning, as our text-books upon anatomy and physiology show. But however we subject its various tissues to chemical analysis the result is always the same—the body consists simply of so much matter in varying degrees of organization. And although our views of matter itself have undergone a most decided change during the past decade, still, for present purposes, it is sufficient to regard it as the basic element in the economy of the body.

And during the last century and a quarter scientists have been subjecting the second member of personality, the mind, to similar searching inquiry under the general heading of psychology. The results of these investigations have been uniformly the same; the mind has always been found to consist of two basic elements each of which is incapable of further analysis. This conclusion was reached in the following fashion:

It was observed that in the normal state the mind was able to reason both *inductively* and *deductively*. In certain abnormal states, however, all inductive ability disappeared leaving only the deductive mind, or portion of the mind, active.

Deductive reasoning is the pure syllogism, which, starting with given premises, shows why

such and such a conclusion must necessarily follow. Any or all of the premises may be false, and consequently the conclusion may be absurd and erroneous—but to discover fallacies in a premise is not the province of the deductive method.

Inductive reasoning, on the other hand, compares a number of isolated facts until it perceives the common factor embodied in all. It is thus concerned not with drawing the logical conclusion proceeding from given premises, but rather with selecting and determining the truth of each and every premise itself.

Now if the reader will carefully consider these two diametrically opposite modes of mental activity, he will see that inductive reasoning implies a power of totally independent action on the part of the thinking entity. And a statement of the power of independent action is, again, nothing more nor less than a statement of the power of choice, or of the ability to *originate trains of causation.* We cannot avoid the inference, therefore, that there is, occluded away in every personality, an element whose distinguishing characteristic is its ability *to select* and *to originate.*

Deductive reasoning, on the other hand, implies no such power of independent action. Indeed, the deductive method cannot be entered

into until some premise has been selected; therefore that element in the mind which reasons only in this fashion, is not identical with, but rather presupposes the existence, and the action, of an originative element.

Thus our initial definition of human personality must be revised, for instead of being merely a composition of mind and body, it consists rather of an originative element, a deductive element, and a material element.

All we can ever know of the originative member of human personality must be gleaned by observing its action as it manifests through the conscious faculties of the individual. These, since they are able to reason both inductively and deductively, appear to be, like personality itself, a synthetic product—a composite, as it were, of an originative member and a deductive member, as these two factors function simultaneously through their physical instrument, the brain. For the connection between the conscious, or objective, faculties and the brain is intimate in the extreme, the state of the latter at any given time conditioning the functioning of the former.

In regard to the second member of human personality, however, we are much more fortunately situated; for, as has been said, in certain abnormal states all power of origination disappears, leaving the deductive mind, or portion

of the mind, dominant. When this condition supervenes its functioning and its effects can be observed with the greatest clarity. Now it is this mind, or portion of the mind, to which psychologists have affixed the names *subconscious* or *subjective,* that is active in hypnosis, and that gives rise to the hypnotic phenomena. And here it may be noted that the subjective mind is by no means dependent upon the brain, but seems to function indifferently throughout the entire body.

The phenomena of hypnosis are most varied in kind, and some are more or less startling in nature; but one and all reveal the fact that the psychic element from which they spring, has, to produce them, been acting in accordance with some premise conveyed to it from a source possessing the power of selection and of origination. Sometimes the premise originates in the conscious faculties of the individual himself, and when this occurs the resulting phenomenon is said to have been induced by *self-hypnosis,* or by *auto-suggestion.* Or the premise may originate in the conscious faculties of another. In this case the result is said to have been induced simply by *suggestion,* and should be classed among the phenomena of *hypnotism.*

This does not mean, however, that the impulse to which the subjective element responds can pro-

ceed *only* from the objective faculties of the individual himself or those of another, for this would restrict the action of the originative element to the realm of consciousness. It means simply that the originative impulse *frequently* comes by way of the objective route. When it does, it comes in the shape of a concept, or an idea.

From these considerations it appears that the psychic, or subjective, element is entirely under the control of the originative element; in fact, that is what the term *subjective* implies. Of itself it is inert and dead until set in motion by the action of its associate. Once, however, it has been set in motion and has been provided with its necessary premise—in the shape of a concept, or an idea, if the impulse come by way of the conscious route—it proceeds to work upon it deductively, and to carry it out to its most rigorously logical result, its power in this respect appearing to be almost unlimited. Thus it is that the psychic element is receptive and executive in nature, its mode of action being always determined by the nature of the premise selected by its originative mate.

But a careful consideration of the hypnotic phenomena reveals more than this: it reveals the fact that the same determining relation which subsists between the originative element and the

psychic element, subsists, also, between the psychic element and the third member of personality—*i.e.* the body. And it is just this determining relation of the psychic element to the body which renders the sciences of psycho-therapy and psycho-analysis possible, and which will explain, moreover, all phenomena of religious healing. Concerning its mode and extent more will be said later on.

Thus again we must modify our definition of human personality. It is, it appears, like a mathematical ratio of three terms—an originative element, a psychic element, and a material element—in which the psychic element bears to the other two the relation of the mean to the extremes. Thus, denoting the terms by x, y, and z, respectively, x is to y as y is to z: or simply, $x:y::y:z$. If this formula be borne in mind it will make much that follows clearer.

Now, from the above, we may draw the practical inference that, if the three factors named constitute the living personality, the *fact of life* consists of the interaction which normally takes place among these three component parts.

CHAPTER II

The Composite Personality

The mesmeric, or as it is now called, the hypnotic state, presents a condition in which there is no longer the normal interaction of an element which originates and an element which receives and executes, functioning simultaneously through their usual instrument, a single human body. On the contrary, it presents an analysis of these factors, the operator, or hypnotizer, assuming the role of the originative member, and the subject, or person hypnotized, playing the part of the passive, receptive and executive member—while their collective brain and body provides the physical instrument through which the composite personality thus formed functions.

Such a composite personality is by no means a new thing in the natural order. It will be remembered that the first appearance of life was as a single cell which, if we grant the evolutionary hypothesis, must have contained within itself both the originative and the executive elements. At this point, it should be noted, reproduction is by means of simple cell division.

Later on, however, one individual assumed the originative, and another the receptive and executive, roles: and when their assumption of these two roles was complete the individuals had be-

come male and female cells respectively. Thenceforth, reproduction was accomplished by the action of the originative male upon the receptive and executive female—the product springing, after a period of incubation, directly from the executive, formative member. At this point the male and female cells, considered as a unit, constitute a composite personality, reproducing in and among its component parts the same elements and relations which subsisted upon the *inside* in the case of the sexless cell of the earlier stage.

Yet later the same life-impulse which had resulted in the integration of male and female elements appears to have drawn the cells, for purposes of subsistence, together into a cell-colony. When this secondary process of integration was complete the colony, and not the cell, had become the individual. This is true as far down in the biological scale as the lower order of sponges, the first intimation of the process appearing, among existing species, with *Volvox Globator*—a point where animal life is scarcely yet differentiated from the vegetable.

With the new organisms thus formed the earliest method of reproduction was by means of budding—a process in every way analogous to the cell division of the preceding stage—for here again the originative and formative elements subsist within, and function through, a single body.

Later, however, these new organisms, each composed of millions of tiny cells, became differentiated into male and female organisms; and from thenceforth reproduction was by means of the action of the originative male upon the receptive and formative female—the product springing, after a period of incubation, directly from the formative member. At this point, again, the male and female organisms, considered as a unit, constitute a composite personality, reproducing upon the *outside* the same elements and relations which subsisted upon the inside in the case of the sexless organism of the earlier stage.

Yet higher in the scale, the same life-impulse which had resulted in the integration of male and female elements, is seen drawing the individuals, for purposes of subsistence, together into a colony. Thus we have the social insects such as the ants and bees. In these communities each individual corresponds to a cell in a cell-colony; the only difference is that they have been welded simply into a group, and not into a single body. That larger and overruling individuality, however, which always results from these processes of integration, appears as such a distinct entity that writers upon the subject have recognized it, and have named it *the spirit of the hive.*

If, in the case of the ants and bees, this process of integration were carried a step further,

we might conceive of the hive or the ant-hill as becoming the individual—at first devoid of sex, and reproducing by a process analogous to cell-fission. Later, however, sex would appear among the individuals thus formed, and thereafter generation would be accomplished by means of the action of the originative male upon the receptive and formative female. And these two, considered as a unit, would constitute another composite personality, and would supply the starting-point for yet another process of integration, which, when complete, would give rise to another sexless product.

In terms of human beings the same process is repeated, for if men and women be considered as the units, reproduction is by means of sex. However, if the composite personality of the family be regarded as the unit, the originative and formative elements subsist within, and function through, the unit itself, and reproduction is by means of budding.

Thus the terms of the evolutionary or creative process are clear, for they consist of nothing more nor less than a series of analyses and integrations of the originative and formative elements, which subsist within the evolving and procreating entities. Each successive analysis or integration takes place, however, always at a higher level.

But, whether the interaction take place upon

the interior plane, as in the case of the sexless organisms, or upon the exterior plane between fully developed male and female entities, creation, it should be remembered, is *always* the result of the action of an originative element upon a receptive and formative one. And, no matter how we may delude ourselves into thinking otherwise, this is the *only* process that has yet appeared either in the evolutionary or in the human scheme. For the same elements and relations that have given rise to the biological tree are at work in the group, the state and the nation. In industry, for instance, it is the action of originative capital upon receptive and executive labor that gives rise to the commercial product—the product springing, after its period of formation, directly from the executive member. And an analysis of any gathering, or of any organization, will reveal a duplication and a reduplication of these same elements and relations, and of this same interaction taking place among them.

But let us return to the phenomenon of hypnotism, which, as has been said, presents an analysis of those factors which comprise the individual, and which is, also, the first step in forming that composite personality which appears in all groups.

The state itself is produced through the operation of the one process mentioned above: the operator assumes the originative, masculine role, and

the subject the receptive, feminine one. But in order to make the subject's assumption of the feminine role complete, the control of his conscious faculties must be removed, for it will be remembered that the conscious faculties possess the power of origination. This is accomplished by fixing the subject's attention—in other words, by prohibiting for a time any act of conscious origination. Conversely, the operator assumes a bearing of authority—he is nothing if not originative. He then begins to suggest to the subject the state which he desires to produce. He does this without arousing opposition, for opposition would imply an act of origination and would call the conscious faculties back into play. And when the idea of the state desired has, by dint of reiteration, become fixed in the subject's mind, his executive, psychic fabric, having accepted it as a premise, works it out to its rigorously logical conclusion; and the state is, in reality, quickly produced. The subject is then said to be hypnotized, and to be *en rapport* with the operator, his only source of conscious origination.

Thus a new personality consisting of an originative member, a psychic member, and a physical instrument through which they function, has been built up.

CHAPTER III

The Basic Concept

Now that we have analyzed the factors of human personality and have them embodied before us in the persons of the operator and the subject, we are in a position intelligently to observe the interaction that goes on between them.

And the first point to be noted is this: there is, operating within the psychic fabric of the subject, that suggestion which was employed by the operator to produce the state. This suggestion, with the idea involved in it, acts as a *basic concept:* it is the foundation upon which the structure of the state has been built; and, since the psychic element acts only from a deductive standpoint, we shall now expect the subject to display no activity and no phenomenon that is not included in this basic concept, or that does not spring logically from it. The subject is thus shut up within a circle the confines of which are determined by the breadth of the basic concept which has given rise to the state. This circle prescribes limits even to the activity of the operator himself, for he can induce in the subject no phenomena that contradict this basic concept.

What the operator can do, however, is to substitute for any given state another state based upon a broader concept; and as soon as this is

done the subject will display new activities corresponding to the new state.

This, the necessity of a basic concept, is a point that should always be borne in mind, for it is of prime importance in attempting those wider applications of which the laws of suggestive therapy logically admit. It has, moreover, important bearings upon education, upon insanity, and, in fact, upon every phase of human life. For in the psychic fabric of every one of us, no less than in the psychic member of the composite personality which we have been considering, basic concepts are at work which determine and limit the activities.

It is this necessity of a basic concept which gives rise to the various phases of hypnosis, each with its peculiar phenomena, a few of which will now be considered.

The suggestion usually employed to produce the hypnotic state contains as its basic concept the idea of sleep. When this suggestion has become operative in the psychic fabric the subject exhibits only those phenomena that are included under that caption. The muscles are relaxed; the senses are dormant, or only slightly active. This stage is called the *lethargic stage,* because lethargy is its dominant characteristic.

However, if the suggestion employed convey, not the idea of sleep, but, let us say, the idea of

fright, a totally different state is produced. It is characterized by a statuesque immobility. The muscles are rigid and will retain the most difficult postures for hours without apparent fatigue. This phase is called the *cataleptic stage*. In it the subject is little more than an automaton.

Catalepsy may be induced, in general terms, by the application of any stimulus that implies recoil. A thunder-clap, or the sounding of an unexpected gong, is often sufficient to cause it in persons of a nervous temperament. A ray of light falling upon the eye of a subject in the lethargic state will produce it instantly. In the animal world the phenomenon of catalepsy plays a conspicuous role, for to it zoologists attribute the immobility of birds and of small mammals under the gaze of certain reptiles. Those insects, also, which feign death upon being touched, have, without doubt, been thrown into a cataleptic condition.

But if the suggestion employed to produce an hypnotic state contain as its basic concept, not the idea of dormance, nor the idea of recoil, but, let us say, an idea of increased activity along one or more lines, yet a third state is produced which is often as far above normal as the states of lethargy and catalepsy are below. This is called the *somnambulistic* stage, and to it the real wonders of hypnotism belong, including phenomena of per-

ception and of ideation which appear to set time and space at naught. These will be reverted to later on.

The foregoing are typical and frequently occurrent hypnotic states; and, since the sole condition of hypnotism is that some concept shall become dominant in the psychic fabric to the exclusion of objective control, one may postulate any number of hypnotic states, each taking its character from the nature of that concept. And many types of insanity, as well as moments of intense creative activity, are, without doubt, self-induced hypnotic states.

But, no matter how great the number of possible hypnotic states may be, the basic concepts which give rise to them must, of necessity, fall under one of two general headings. They must be either *positive* or *negative* with respect to the individual: they must be either concepts of good or concepts of bad. If they are negative with respect to the individual, the states to which they give rise are states of depression, and the phenomena pertaining to those states are phenomena of *subnormality*. If, however, they are positive with respect to the individual, the resulting states are states of stimulation whose phenomena are *supernormal* in nature.

From these considerations we may draw the practical inference that the psychic element is per-

petually in a state of *becoming*—a becoming that may consist of a diminishing or an augmenting, of a deadening or a quickening, according to the nature of the basic concept operating in it at the time.

But whether the concept operative at any given time result in depression or in stimulation, it should be remembered that the ability to change the state by altering the basic concept must forever reside in the originative member of the personality. Thus, in the composite personality which we are now considering, the skilful operator is able to change lethargy into catalepsy and catalepsy into somnambulism at will. He may even produce one phase in one half of the body and another phase in the other half at the same time—a circumstance which has revealed important anatomical relations.

Here it may interest the reader to know that the psychic entity, or, if he prefer, the *soul,* residing in every one of us, is none other than "the poor little girl" of fairy-tale. At first she was horribly maltreated, and, according to many of the stories, was clad only in rags, and in very dirty rags at that. Later, however, as in many of the versions of Cinderella, her apparel was woven "of sunlight—of the stars and of night—and of the pink tints of morning." And always in the end she is wedded to the Prince.

CHAPTER IV

The Becoming of the Body

It was pointed out in the opening chapter that the psychic element bears to the body the same determining relation that the originative member of personality bears to the psychic. And this determining relation is well illustrated in the common vaudeville trick where the hypnotic operator often induces catalepsy to such an extent that the subject, with only the extremities of the body supported, is able to sustain the combined weight of four or five men.

This influence of the condition of the psychic element upon the condition of its physical instrument, however, extends far deeper than mere matters of muscular contraction. In fact, by tests conducted in the psychic clinic, it has been found to extend to, and to condition, every process of the body, from the functioning of the glands and organs to such interior matters as circulation, excretion of the cells, and even growth.

Fifteen years ago the scientific world was far from accepting the psychic element in the role of determining agent in bodily conditions; and the reason for this was that the average man of medicine viewed the body itself as a *cause,* and not simply as an *effect.* This fundamental fallacy arose, it would seem, from the apparent rigidity

of matter when viewed from the outside. And yet, if he had only remembered that the matter of which the body is composed had itself gone through successive stages of organization and growth, from the fertilized ovum so small as to be almost microscopic, on up into the adult being, he could scarcely have avoided the inference that, from the standpoint of the interior power which thus organizes it, matter is—must be—a perfectly plastic substance to be shaped and molded at will.

Now the point of chief interest is this: since the close of the last century the final analysis of matter has been accomplished: and we now know, by tests of actual experiment, that matter, in its inmost nature, is just the perfectly plastic substance which we might have inferred it to be by observing the phenomenon of growth. And we are reasonably certain of a little more than this: we are now reasonably certain that matter has no existence *in itself*, but is simply a *condition* of the primary ether out of which all forms appear at last analysis to have been concentrated.

These truths find their respective scientific expression in the *Corpuscular* and *Electronic* theories of matter, and because of their importance the author has subjoined, on page 107, a brief statement of the theories themselves, together with an account of the discoveries which led up to them.

When this, the now definitely ascertained nature of matter, is borne in mind, it is no longer difficult to ascribe to the psychic element a determining role in relation to the body, nor to explain the phenomenon of psychic cure—nor, indeed, such bizarre occurrences as cases of *stigmatization,* or the spontaneous appearance upon the flesh of blisters, wounds, scars, or other disfiguring marks, of which the history of miracle is full.

In F. W. H. Myers' work, *Human Personality* (Vol. 1; p. 492 ff.), the reader will find the records of two cases of stigmatization which illustrate in the most striking manner the power of the psychic element in producing effects upon the body. Both involve the periodic appearance of bloody marks upon the flesh. They differ, however, in that in the first case the suggestion which afterwards externalized as the stigmata, was conveyed to the subject while in a state of hypnosis; while in the second, the suggestion clearly originated in the conscious faculties of the subject herself.

It is from the consideration of such cases as these, and scores of others, that we have arrived at the practical inference that the body, like the psychic element itself, is continually in a state of becoming—a becoming that may at any time consist of a diminishing or an augmenting, of a disintegrating or of an integrating. And since the

psychic element bears a determining relation to the body, it should be noted that the becoming of the latter depends upon the nature of the basic concepts operative in the psychic fabric at the time. As has been said, it is upon the truth of this induction that the twin sciences of psycho-therapy and psycho-analysis are based.

These two sciences are, respectively, the obverse and the reverse of the coin: they are similar in that striking cures have been effected by both. These results, however, are arrived at by diametrically opposite methods.

The method of the psycho-analyst, stated in general terms, is as follows: when confronted with a depressed, diseased condition, the physician assumes that the body has already undergone a certain amount of disintegration by virtue of some negative basic concept operating in the psychic fabric. Experience has shown that this concept usually arises from some *mis*conception of the moral law, with the resulting effort on the part of the individual to repress some desire. Hence has arisen the axiom among one school of analysts that, "repression is the cause and expression the cure." Be that as it may, however, the fact that it is causing trouble shows plainly that the concept is negative in nature. It then becomes the task of the physician to find and to eradicate it from the psychic fabric, assuming

that when this is done the body will undergo a corresponding change.

But here a difficulty presents itself: the patient seldom knows what concept it is that is causing the depression. To bridge this difficulty, therefore, the physician often has recourse to the patient's dreams, for dreams are a symbolic statement of that which is operative within the subjective depths. These he records and analyzes, and although in adults their language is often involved and figurative, under careful scrutiny they will usually reveal the dominant concept, or, as some prefer to call it, the *fixed idea,* which is responsible for the depressed condition.

When this has been found, the remaining portion of the treatment is simple: it consists merely of leading the patient to suspect some causal relation between his idea and his suffering. And the moment that this is done, the same impulse which led him to seek relief, calls his power of origination and selection into play. He now no longer accepts, but consciously rejects, the idea; and when this occurs restoration to health follows, often in the most immediate fashion.

The space at the author's disposal does not permit dilation of this most interesting subject of dream analysis, and consequently, for a more detailed discussion of its theory, its technique, and its achievements, the reader must be referred to

standard works upon the subject. These he will find listed in the bibliography at the end of the book. Suffice it to say simply that such disorders as blindness and paralysis have vanished under this modern method of soul-surgery.

Psycho-therapy, on the other hand, takes just the opposite approach to the problem, for here the physician, instead of endeavoring to eradicate that which is depressing, seeks rather to counteract it by building in that which is stimulating. To this end the hypnotic state is induced, and the positive concept which the case seems to require is impressed directly upon the subjective fabric by means of suggestion.

Thus, Wetterstrand in his work, *Hypnotism and its Application to Practical Medicine* (page 77), relates the case of a patient in the last stages of tuberculosis. Acute suffering had been occasioned by the failure of the kidneys to function properly; consequently the hypnotic state was resorted to. The physician then suggested a copious excretion of urine, with the result that the kidneys responded almost immediately.

Now, although in the literature available upon the subject, one will find records of disorders ranging from moral defects to organic troubles, that have been cured or ameliorated through its use, it should be observed that psycho-therapy, as it is practiced, has one vulnerable point. The

physician must depend upon his own diagnosis to tell him just what positive, constructive suggestion is required. And, in the case mentioned above, the fact that the patient died, shows clearly that while the proper functioning of the kidneys was desirable, this alone was not sufficient to save life. This is a difficulty which the psycho-analyst in a measure avoids, for, occupying himself only with the excision of negative concepts, he leaves the building-up process to the recuperative powers of the patient himself.

It is just because of this difficulty that psychotherapeutists are to-day beginning more and more to *generalize* the positive concepts which they impress upon their patients. Thus, instead of suggesting that this or that organ shall function in a normal manner, there is a tendency for them to suggest, rather, that a general state of health shall be produced; for this general concept of health will cover and correct the depression of any particular part.

However, when one begins to generalize positive concepts, one lands, through sheer sequences of logic, in a conception of the Universal, or of Deity. For, turn the matter which way you will, the terms, *Universal* and *Deity,* convey, to the modern mind at least, the idea of a *complete generalization of all positive attributes.* Consequently, a conception of Deity, or of the

Universal, is a *complete generalization of all positive concepts.*

Therefore it is that, if a conception of the Universal, or of Deity, embodying the idea of such generalized positive attributes as *being, beneficence, omnipotence, omnipresence,* etc., were adequately impressed upon the subjective fabric, one might reasonably expect this concept to act as a terrifically constructive agent, sufficiently broad in its nature to cover and to correct *all* depressed conditions.

And this is exactly what takes place in all cases of religious healing, which are none the less divine for being intelligible and simple.

CHAPTER V

The Becoming of the Faculties

Physical health is, of course, the most important thing in the world, and it is just this circumstance which renders imperative the application of the simple laws of therapy to larger and larger units of humanity. But there is another phase of the subject that must not be overlooked, and this is the effect of positive, constructive concepts upon the faculties.

From a consideration of the hypnotic phenomena we find that the psychic element, which integrates or disintegrates the body according to the nature of the basic concept operative in it at the time, also deadens or quickens the intellectual and sensory faculties according to the same simple law.

The deadening of the faculties is well illustrated by another trick common upon the vaudeville stage, in which the operator produces *aphasia* to such an extent that the subject upon waking cannot remember his own name. And unless the inhibiting suggestion be removed, the aphasia will continue, sometimes for years, into the post-hypnotic state. In *Animal Magnetism,* a work by Binet and Féré, physicians at the Salpêtrière clinic in Paris, the reader will find records of many cases of this kind, involving the suspension

of one or more of the intellectual or sensory faculties, and with reference either to one, or to all, sources of stimulation.

The psychic element, however, is just as ready to respond to a positive premise as it is to a negative, privative one; and when it does the faculties are stimulated, in some instances, astonishingly far above normal. When occurring in terms of the composite personality of the psychic clinic, these phenomena of stimulation are called *somnambulistic phenomena,* while the state of the subject is termed *somnambulism.* When occurring spontaneously in terms of the individual personality, however, the individual himself is called a *genius,* or a *prodigy.*

Now, in terms of the composite personality of the psychic clinic, somnambulism results from any suggestion that implies increased activity along one or more lines. If, simply, the methods of the operator stimulate the imagination of the subject, somnambulism supervenes. If the method involve continued tax upon any of the faculties, such as straining to see or to hear, this condition of extreme lucidity again results. Or, finally, any of the other hypnotic states may be turned into somnambulism, often by mere pressure upon the subject's head—a gesture which, through an association of ideas if nothing more, would convey the required suggestion. And here it may

interest the reader to note that the phenomenon of *second wind,* which occurs in the individual personality under continued physical or mental effort, is nothing more nor less than the response of the psychic element to a premise involving the idea of increased activity.

In somnambulism, as has been said, all processes are greatly accelerated. Thus, somnambules have been observed in whom the senses had been rendered so acute that they were able to follow the scent of a rose, or the ticking of a watch, at distances of forty or fifty feet.

Such alertness of sense perception, however, scarcely deserves comment when compared with the prodigious feats of memory which the somnambule is able to perform. For in this state the repeating of page after page of printed matter, which has not been read, perhaps, in years, is by no means an infrequent occurrence; such phenomena indicating, it would seem, that a perfect record of all past impressions subsists within the subjective fabric—a record which is unavailable to the majority of us because of inhibiting and limiting basic concepts operative during what we are accustomed to call the normal state.

In somnambulism the purely intellectual faculties also show a commensurate quickening. Indeed, they are sometimes so nearly instantaneous in their functioning that one may question

whether the act of reasoning to a conclusion does not become merged in an immediate perception of abstract relations. For, if a somnambule be asked to abstract the square or cube root of a number, the answer is frequently forthcoming before the voice of the operator has died away. In the normal state the abstraction of roots is a laborious process: not so, however, with the somnambule, once he has been assured that he possesses the necessary ability and knowledge.

And other phenomena, also, which involve, not an immediate perception of abstract relations, but an immediate perception of objects and events remote from the percipient either in time or space, occur frequently in the somnambulistic state. These may be summed up under the headings of *clairvoyance, clairaudience, prescience, psychometry,* etc., for a detailed description of which the reader must again be referred to the records of the Salpêtrière clinic. A good idea of these transcendental powers, however, may be gleaned from a case which came under the personal observation of the author several years ago. The incident occurred in a mining camp in the mountains of Colorado, and in connection with a very melodramatic robbery. In it the somnambules described in all detail a running fight between the robbers and a sheriff's posse—a fight which had taken place several hours prior to the sitting, and at dis-

tances of from twenty to thirty miles away. They then described the capture of the highwaymen by the same posse—an event which, it was subsequently learned, did not take place until the following day.

Interesting as these phenomena are, however, by far the most fascinating phase of the present question is the role played by the imagination in the economy of the composite personality of the psychic clinic. For it will be remembered that this composite personality, like the composite personality of the family, presents all of those elements which in the biological world appear to have given rise to the phenomena of sex and of generation. In other words, it consists of an originative, masculine element, and of a receptive and executive feminine element, as embodied in the operator and the subject respectively. Therefore, startling as it may sound, we might reasonably expect some traces of actual creation to result from the interaction of these two. For otherwise the relation between operator and subject would be like the relation of two lovers, between whom whatever interaction there is results merely in new states of consciousness, but stops short of the creative act itself. Binet and Féré set forth this sex aspect of hypnotism in a most illuminating and fascinating manner, under the heading of *elective somnambulism*.

Now it should be noted that traces of actual creation *do* occur in the psychic clinic, and up until the present time have been a source of much mystification and scientific worry. And these traces of actual creation appear just as soon as the subject's imaging faculty is stimulated into activity. The result is, of course, the hallucination.

In popular parlance the term, *hallucination,* is used to indicate something that has no existence of its own, but that exists merely as an image within the percipient's mind. Such a definition, however, can by no means be applied to the hallucinations produced in the psychic clinic. For here, although the projected image may remain invisible to all save the subject, it has been found, nevertheless, successfully to withstand every test of objectivity which the ingenuity of the operator can devise. For instance, so far as the subject is concerned, it will obey all of the laws of optics. An opera-glass will approach or distance the image according to the end through which it is viewed, while the glasses themselves must be variously adjusted for the near-sighted and the far-sighted to enable both to see it. A magnifying glass, moreover, will enlarge the hallucination, and a refracting prism will double it—the amount of displacement corresponding always with the prism's index of refraction. Further-

more, the proximity of a magnet has been observed to have the effect of displacing, or of dispersing, the illusory object, although it has not yet been determined whether this phenomenon is due to some suggestive influence exerted by the operator upon the subject, or to actual torsion exerted by the magnet upon the image itself.

In line with the above, the author could not do better than quote the words of an eminent Swedish neurologist, Fredrik Björnström, in regard to phenomena of this type observed at La Salpêtrière. "Although an optical illusion," says Björnström, "seem to be fixed only in the brain of the one who sees it, it yet seems as though the hallucinator possesses a certain power of giving the image some kind of physical fixation in reality." Then, after citing several instances in which the image withstood all tests of objectivity, he continues: "If the spiritualist were asked to explain such phenomena he would immediately have on hand an answer that would solve the enigma; his doctrine of materialization—if it were only true. For he claims in the human spirit, as in the absolute Spirit of the Universe, a certain creative power, and does not consider it impossible that the optical illusion of man, projected from the eye, deposits a fine ethereal substance, which imperceptible to ordinary eyes is yet easily visible to eyes sharpened by hypnotism. . . . It

must be reserved for future science to solve this enigma; the science of today can only acknowledge its want of power in this respect." This comment was made some years prior to the discovery of radium and the advent of the Corpuscular and Electronic theories of matter.

Now, from the foregoing considerations it would appear that the faculties, like the body, are continually in a state of becoming—a becoming that may at any time consist of a diminishing or an augmenting, of a deadening or a quickening—according to the nature of the basic concept operative in the psychic fabric. Since this is so, we would therefore expect the highest states, and the most varied and supernormal phenomena, to occur in those cases in which the basic concept most nearly approaches a complete generalization of all positive concepts—or in other words, an idea of the Universal.

And not only do experiments with the composite personality of the psychic clinic bear this supposition out, but history offers corroborative testimony in terms of the individual personality. For the very highest states of consciousness, and the most supernormal powers, have occurred uniformly in the case of those whose conscious thought was most habitually occupied with conceptions of Deity as omnipotent, omniscient and omnipresent Being.

CHAPTER VI

The Organism of the Theater

"The world's a stage," wrote William Shakespeare, and for three hundred years critics and authors have been content to let it go at that. But the converse is equally true and is much more illuminating—the stage is a world and, as the author has endeavored to point out in tracing the appearance and reappearance of the elements of personality in all groups, a world is a person.

And surely no other institution in our civil fabric, not even the composite personality of the psychic clinic itself, presents the elements of personality in such clear cut fashion as does the theater.

For instance, in the author and producer we have the originative element, hidden, scarcely existent, so far as the major portion of the organism is aware. Yet these two by their action upon a receptive and executive group, the actors, give rise, in the enacted play to a series of pictures in every way analogous to a train of conscious thought in the mind. In the economy of the theater-person, therefore, we may regard the stage as the head, the actors as the brain cells, and the enacted play as the functioning of the conscious or objective faculties. We have found, moreover, that these conscious faculties are a syn-

thetic product, arising from the action of an originative element upon a receptive and executive element—just as they appear to be in the case of the individual.

However, no personality is complete without a subjective fabric upon which the concepts emanating from the originative member may be recorded. And in the economy of the theater-person the place of the subjective fabric is supplied by that portion of the receptive and executive element not employed upon the stage—in other words, by the audience. But it will be remembered that the subjective fabric responds always in accordance with some suggestion conveyed to it, and that it can respond in no other way. This, also, is the law of the audience, whose emotional states are determined from moment to moment by suggestions conveyed to it over the footlights. Nor does the matter stop there, for the response of the audience reacts upon the actors, just as the response of the subjective entity reacts upon the conscious faculties of the individual, and improves or depresses their functioning. It is, moreover, the quality of this emotional give and take between the originative member and the receptive member, maintained through the medium of the stage, that determines the tempo of life in, and consequently the duration of, any particular theater-personality.

Thus it is that a theater with a play in progress is a living organism, whose body like that of *Volvox Globator,* is composed of hundreds of living cells, and whose life-processes consist of the interaction taking place among its component parts.

It is curious, in view of the volumes that have been written upon the subject of the stage, that we have been so slow in perceiving the patent parallel between the individual and the theater. It is curious, also, that we have failed to identify the condition of mind obtaining in the audience with the hypnotic state, which is the normal state of the psychic member. And yet, among these writers upon the drama, there must have been men who realized that the first step in the production of hypnosis is to prohibit for a time any act of conscious origination—in other words, to fix the attention. For Braid, among others, writing as far back as 1845 or 6, puts the matter plainly: "It is always," he says, "a process of mono-ideism (or of concentrated attention) that calls forth the hypnotic phenomena." And if this condition of concentrated attention does not obtain in a theater, especially during the more dramatic moments of a play, then indeed there is no such thing as concentrated attention. It is, moreover, just the fact that an audience during a performance *is* in a slight hypnotic condition that accounts for the standing criticism lodged

by the producer against the public. "An audience," he says, "will not think." As a matter of fact in that condition the theater-goer cannot think, for to start a train of conscious thought implies an act of origination, and this is prohibited so long as demands are made upon the attention. The spectator, therefore, like the hypnotized subject, is, by the very terms of his condition, incapable of thought: all he can do is to receive and respond to impressions.

This is a point which the public performers of the backward Orient never overlook, for one and all seem to realize that to fix the attention of a gathering is to induce an hypnotic state, and many of them are able to fix attention to such a degree that hallucinations, often on the part of an entire assembly, are sometimes produced. Thus it is that with these swarthy-skinned entertainers such stage effects as are involved in the *rope trick*, the *basket trick*, and the *growing mango tree* become possible—and without such crude accessories as drop and footlight.

But the point that should prove of chief interest to us of the practical Occident is this: if a theater full of people presents such an exact analogue to the individual, and to the composite personality of the clinic, it should be subject to the same laws of becoming. In other words, the author and producer, through the medium of the

actor, should be able to induce in the subjective member of the theater-person all of those physical readjustments and supernormal states which the individual is able to induce in himself by means of auto-suggestion, or which the operator is able to induce in the subject, by means of the spoken word.

And a little consideration will show that the theater-person *is* subject to the same simple law of becoming. For if the play convey destructive, depressing suggestion to its subjective member, the audience is depressed and ill-at-ease. The play is then said to lack popular appeal, and it is not a great while before the particular theater-person built up about it begins, likewise, to show signs of depression—until finally it goes to pieces with the withdrawal of the play.

If, however, a play convey constructive suggestion to its subjective member, stimulation ensues, and the audience leaves the theater with a sense of exhilaration. The play is then said to possess popular appeal, and, all things being equal, the theater-person built up about it enters upon an indefinite period of healthy existence.

It only remains then, to determine wherein the constructive or destructive suggestion conveyed by a play lies before we can judge with some degree of certainty its chances of success. And a little consideration will show us that this deter-

mining quality can lie nowhere but in the originative member of the theater-personality itself. Therefore, we will not look to the technique of the play; we will not look to its cleverness of line, its theme, or its dramatic values, but we will look first, last, and always to the *viewpoint of the author*. For if his viewpoint be positive, no matter with what disasters he may deal, he will present life in a positive aspect, and this positive view will constitute the basic concept involved in his play. If, however, his viewpoint be negative—if all he can see of life is its ugliness and its shortcomings—this, also, will show in his work, and will constitute its basic concept. And, just as in the case of the composite personality of the clinic, it is the basic concept impressed upon the subjective member which determines the nature of its becoming, causing either psychic stimulation or psychic recoil.

Now if this, the nature of the basic concept, be borne in mind, all other things being equal, it will be found to explain every success or failure in the theatrical world. It will explain the popularity of the show that has nothing to recommend it but the exposure of its chorus; for that view of life which assumes that women are fair, and consequently to be desired, though for the sake of respectability we may condemn it, constitutes, nevertheless, a positive premise.

In this same antithesis of a positive or negative basic concept lies the secret of the perennial popularity of comedy. For comedy, dealing with love and marriage, treats broadly of fulfilled desire. And the assumption that the desires of life are good and capable of fulfillment again constitutes a positive premise.

Allied to comedy, and even more satisfactory from the standpoint of the box-office, are those plays which deal with the regeneration of character. For in such cases the authors have assumed that the individual possesses within himself the power to overcome all defects and difficulties—a conception, which, when it becomes operative in the minds of the audience, cannot but result in stimulation. These are the plays to which people return night after night for strength and encouragement.

And the same antithesis explains, also, why truly great tragedy stimulates rather than depresses. For, although tragedy deals with disaster and death, the basic concept involved in it is, nevertheless, powerfully constructive. In fact, it is just the presence of this constructive basic concept that distinguishes great tragedy from near-tragedy, which always depresses its audience, and from melodrama, which frequently does. For great tragedy assumes the existence of a universal something, which manifests as im-

mutable moral law. And, as we have seen from our consideration of the phenomenon of healing and of supernormal states, to assume the existence, in any of its aspects, of that which is universal, is to convey to the subjective member suggestion of the most powerfully constructive type. Hence the sense of great calm which tragedy creates in the mind of the spectator; hence, also, the reason why it holds the boards from century to century.

Finally, this question of a positive or negative basic concept explains why the public cannot tolerate the plays of certain gloomy, destructive northern writers. These plays are for the most part of magnificent workmanship, and are breathlessly interesting from the first to the final curtain. As a rule, however, they present life in a negative aspect; and as for the average theater-goer, he prefers a very bad play which avoids this fundamental error to a very excellent one which does not. And his reasons are psychologically sound: for the first, bad as it may be, contributes somewhat to his happiness: in the case of the second, however, the better and more convincing it is, the more unhappy and depressed the spectator becomes.

Thus, obviously, Shakespeare was wrong when he said, "The play's the thing." On the contrary the play is not the thing: it is the basic concept

involved in the play that is the main thing, and it is only by grasping this fact that the greatness and success of the past can be made the starting-point for the greatness and success of the present.

Since, then, the psychic stimulation or depression produced by a play lies primarily in the nature of its basic concept, may we not postulate a type of play that will create in the minds of the audience the maximum amount of stimulation? Certainly we may, and the method of doing so is perfectly logical. Now, from our consideration of personality, we have found that the greatest bodily readjustments and the highest mental powers appear as the positive concept, which gives rise to them, more and more nearly approaches a complete generalization—in other words, a conception of the Universal. Why, then, should not the dramatic author take as the basic concept of his play the immanence and actuality of the Universal, and view and present life as set against a background of *Being?*

Now the critical reader will remark that only a paragraph or so above the statement was made that tragedy fulfilled this condition. This is very true, and, it must also be observed, tragedy induces psychic stimulation—the greatest amount that has yet been obtained in the theater. But even so, this stimulation falls far short of that

which is induced in the individual, and in the composite personality of the clinic, as the basic concept approaches universality. And a careful consideration of the method of tragedy will show us why.

Tragedy assumes the existence of the Universal in the aspect of moral law. It then suggests its immanence and actuality by pitting against it a disobedient mortal. The mortal is, of course, overwhelmed; but since the emphasis of the play is put, not upon his suffering, but upon the law, opposition to which causes his suffering, this serves to indicate all the more vividly the existence of the Universal. Now it will be seen at once that as long as this method of presentation is followed the *active* element in the play is, and must continue to be, the disobedient mortal—a circumstance which, *ipso facto,* reduces the Universal to a *passive* role. Its part, therefore, becomes merely the part of permanence and of immutability, and, it should be noted, a corresponding sense of permanence and calm is induced in the spectator —the intenseness of the phenomenon depending directly upon the vividness with which these qualities have been suggested.

And, although we may turn the pages of dramatic literature in vain in search of a play which reverses these conditions, in real life instances are not wanting in which a conception of the Univer-

sal as an intensely *active* agent has been conveyed to the mass mind. Whenever this has occurred the most astonishing things have happened, including terrific emotional upheavals, supernormal mental states, and phenomena of cure.

One of the most clearly cut cases of this kind occurred in eighteenth century France: for Frederick Anton Mesmer fulfilled just the conditions described, and fulfilled them in the following manner. He postulated the existence of a force called *animal magnetism,* which bore an active, beneficent relation to individual life. According to his thesis it was universal, being occluded in all matter, and through its agency relief from all manner of physical depression might be found. How matters went in Mesmer's clinic, once this universalized, positive basic concept became operative in the minds of his patients, is described by I. P. Broberg in his lectures, *Animal Magnetism and Mysticism of the Eighteenth Century,* from which the following is taken.

"Mesmer's parlors at the hotel in the Place Vendome soon became the resort of the Paris fashionable world. In the so-called experimenting room there stood in the middle of the floor a round tub, a *baquet,* with a diameter of about five feet and provided with a lid. On the bottom of it bottles were so placed that some had their necks converging towards the center, while others di-

verged outwards. The tub was filled with water so that the bottles were covered; through the lid, which was provided with several holes, bent iron bars protruded. The walls of the room were covered with mirrors, by the reflection of which the magnetism was increased, according to the doctrine of Mesmer. The patients were placed in a circle around the tub, or *baquet,* so close that they were in contact with each other's knees. Each one held in his hand one of the iron bars that protruded from the *baquet.* Generally there was placed a second row of patients behind the first—and often there were several rows—who formed closed chains by holding each other's hands, and who were in contact with the tub by means of long, magnetized cords. Besides, all the patients were mutually connected by a cord twisted around each one's waist. . . .

"A mystic twilight prevailed in the room. The ear was charmed by sweet melodies played on harp and piano and during the pauses a harmonium sounded its soft, vibrating tones—an instrument that Mesmer played with a master hand. Men and women were now sitting beside each other, holding the mystic bars from the tub besides each other's hands; first one, then another, began to experience strange sensations and twitchings which were soon imparted to all of them. Then Mesmer solemnly entered, dressed

in a violet robe of embroidered silk, holding in his hand an iron staff. With majestic dignity he walked around and stroked the patients. Within a short time the healing crises appeared. The patients jumped up, wept, laughed, embraced each other, etc. 'Those who have not actually witnessed the scenes in Mesmer's parlors,' writes a contemporary, 'can hardly form any idea of them. On the other hand if we witness them we can only be astonished, partly at the complete tranquillity and repose displayed by some, partly also at the violent excitement shown by others. . . .'"

CHAPTER VII

The Ultra-Comedy

If a therapeutic drama be possible at all, it must, as we have seen, assume as its basic concept the immanence and actuality of the Universal in some active, beneficent aspect. If this be assumed, and if the concept be driven home but half so successfully as Mesmer succeeded in driving it, it is safe to say that before the performance is over the suggestion will have become operative in the subjective mass-mind beyond the footlights. Should this occur, phenomena corresponding to the aspect of the Universal that had been suggested will begin to appear.

Now in the case of Mesmer's ceremonial it required but a comparatively short time for the basic concept to become operative—a circumstance which indicates that his method of conveying it was both powerful and efficacious. And a careful consideration of the account given in the preceding chapter will show that the merit of his method lay in its absolute singleness of purpose. For Mesmer had advertised abroad his theory of animal magnetism, and when his patients assembled at his hotel it was for the sole purpose of being acted upon by this mysterious, beneficial force. Upon their arrival they found themselves in an environment every detail of which was cal-

culated to keep the idea of its existence always in the foreground of thought. There was no straying from the point. Everywhere—in the mirrors upon the walls, in the furnishings of the room, in its inexplicable but harmless apparatus, and in the attire and bearing of the therapeutist himself—they were confronted with the suggestion of its immanence, a suggestion that was reiterated at every moment and at every turn.

Profiting by Mesmer's example, therefore, the author of a therapeutic play would certainly seek to drive his basic concept home by means of reiterative suggestion, and it would be this consideration, doubtless, which would determine the structure of his entire play.

However, before an idea can be suggested by means of the spoken word it must be phrased. The author would, then, seek in some way to phrase his basic concept. The result of his effort would be, doubtless, some line of connotative value. This he would introduce into his opening scene where its presence would be accepted as a vagary of characterization, or as a mere accident of writing. But thereafter he would never allow it to be lost sight of. It would recur and recur, each time with added significance and with broader meaning: it should stand to the play as the *theme* to the music. By the intelligent and artistic employment of such a device the imma-

nence and actuality of the Universal could be insisted upon and insisted upon, until an audience were all but wild with suspense and anxiety.

So far as the present writer is aware there is only one instance in dramatic literature where reiterative suggestion, as embodied in such a recurring phrase, is used for the purpose of creating predetermined states in the mass mind: and even here the device is not applied directly to the minds of the audience, but only to the minds of a stage mob. The incident occurs, of course, in *Julius Caesar,* in which Marc Antony, by the repeated use of a single ironical expression, is represented as sowing the seeds of sedition and civil strife among the Roman people.

But if such a recurrent *theme* is to be employed by the therapeutic writer, it will be seen at once that the device will, in a measure, determine the nature of the scenes themselves. For if it is to possess a broader meaning every time it occurs, the intervening scenes must occupy themselves with expanding that meaning. We cannot avoid the inference, therefore, that every scene in a therapeutic play will, in a sense, be a duplication of the preceding scene, but will, nevertheless, represent an advance upon it.

This double necessity of repetition and advance lands us in a structure in every way analogous to the musical scale. Upon the keyboard each

octave begins and terminates with the same note. This note, therefore, stands to the scale in the same relation as such a recurrent *theme* would stand to the play; while the intervening notes, constituting the octaves, would correspond to the scenes: and each octave, while it is an exact duplication of the preceding octave, presents, nevertheless, an advance upon it, in that it is higher in the scale.

A little consideration will show that the structure postulated above will bear an important and determining relation to the subject matter of the play itself; for the only themes that can be pressed into such a mold are themes which deal with development—that is, with a constant transition from one state to another. And, since the drama deals primarily with human character, we cannot avoid the conclusion that the therapeutic play must occupy itself with a constant transition, or with a *becoming,* of character.

It has long been an axiom of dramatic criticism that no play is a great play unless it present such a becoming on the part of one or more of its roles. And when we view the theater as an organism in which new states of consciousness are being continually created by the suggestive effect of a series of scenes, the reason for this axiom becomes apparent.

Since, then, we cannot avoid presenting a be-

coming of character, the next step is to determine in what direction this becoming shall be viewed as taking place. A little consideration, however, will show that if it be presented as taking place in a negative direction, depression and final death will result. In such a case we would be dealing with tragedy, and, as we have seen, tragedy involves presenting the Universal, not in an actively beneficent role, but in the role of passive immutability. The only alternative then, is to present becoming in its positive aspect. To do this is to follow the general method of comedy.

Heretofore comedy has occupied itself with these positive developments of character only in the most vague and nebulous fashion; its nearest approach to a *pure* method of treatment occurring in the case of plays of regeneration. And the sole purpose of this chapter is to deduce the pure structure of a play which shall follow comedy's lead in presenting positive developments, and which shall, also, like tragedy, have as its avowed purpose the suggestion of the immanence and actuality of the Universal. Such a type of play, for want of a better title, we may call the *ultra-comedy.*

Thus far in our consideration of ultra-comedy we have two factors—the Universal, the fact of whose immanence and actuality is to be suggested, and a positively developing character. And

combining these, we have a character who is developing into a consciousness of the Universal. Upon this basis, therefore, each scene beginning with the suggestion that the Universal exists, would proceed to show the character as becoming somewhat conscious of its existence. In the next scene he would become more conscious of it, and so on.

Now, in connection with the character's growing consciousness of the immanence and actuality of the Universal, there are two points to be considered, both of which are of extreme importance. The first is the process by which the character himself shall become aware of Universal presence, and the second is the dramaturgical method by which his growing *awareness* may be most vividly impressed upon the audience. Discussion of the first point, however, will have to be postponed until the nature of the environment and the background against which the developing role is set can be considered; and so, asking the reader to make a mental note of it, we will pass at once to the discussion of the second.

As we have seen from our consideration of personality, whatever is present in the conscious thought of the individual, or whatever is voiced by the operator in the case of the composite personality of the psychic clinic, constitutes a basic concept to which the subjective member of the

personality responds, to the upbuilding or depressing of the entire organism. Let us suppose, then, that the developing role, in a manner yet to be discussed, is beginning to arrive at the conclusion that the Universal is immanent and actual in such and such an aspect. Now it will be remembered that the Universal has been defined as a complete generalization of all positive attributes. Consequently, the recognition by the individual of some particular attribute would be nothing more nor less than his acquisition of some positive concept. This positive concept, then, would become impressed upon his subjective fabric, and his subjective fabric would immediately respond. Thereafter, the author would present him as being in a state of stimulation, with definitely increased powers of the kind included in, and springing logically from, the positive basic concept acquired. And the sudden appearance of this state of stimulation, and of these powers, as the obvious effect proceeding from the character's growing recognition of the Universal, would vividly suggest to the audience the immanence and actuality of the latter as an underlying, active cause.

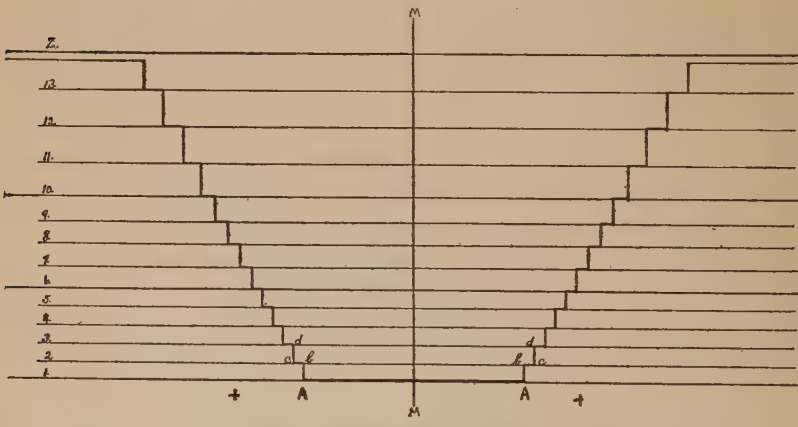
From these considerations it follows that the suggestive effect of a play of this type will lie, not so much in the astonishing nature of the gifts acquired by the developing character, as in the

fact of their appearance. Consequently, the more frequently the author can represent a state of stimulation as supervening, and the more definite, instantaneous and clear-cut this state of stimulation is, the better and more powerful the play will be. Indeed, not the degree of change, but the *fact* of change, is the point that should at all times claim the author's chief attention: for the play which he is writing is like an induction-coil, in which the voltage of the induced, or secondary, current depends, not so much upon the strength of the primary current, as upon the suddenness and frequency with which the primary current can be started and stopped. This rule of frequent and sudden transition from state to state should be applied, moreover, throughout every department of the play.

Now the present writer is well aware that no finite mind may ever be conceived of as attaining a complete conception of the attributes of the Universal, for these, by the terms of our definition, are infinite in number. The most the author can be expected to do is to represent his character as acquiring a large number of positive concepts —the more the better. And fortunately this progressive acquisition of positive concepts can, like a mathematical progression, be accelerated in any ratio that the author may desire. It is this circumstance which permits a therapeutic play to be

drawn to a definite climax. Concerning this climax, and its accompanying phenomena, more will be said later on.

Such, as the author conceives it, is the *essential* character development with which ultra-comedy must deal, if the play is to build up in the minds of the audience such a generalized conception of good that the actual elimination of depressed conditions may result. Its method may be graphically represented by an inverted truncated pyramid, thus:



In the above figure we have a series of 13 scenes. On this scene-clef the base-line, *AA*, represents the character's conscious horizon at the opening of the play. The vertical lines, *Ab*, represent the amount of growth taking place in scene 1. At the points *b*, however, the character begins

a second scene, which results in the acquisition of a positive concept at *c*. When this concept becomes operative, growth takes place along the lines *cd,* bringing the character up to the level of the third scene; and so on. In scene 13 the greatest number of positive concepts and the widest outlook are attained.

This is the *essential* structure: it is the framework of the therapeutic play. As will be seen it presupposes only the successive acquisition of positive concepts and their resulting states of stimulation. It takes into account, therefore, only the *making* of the current in the primary coil. Its *breaking* will be considered in the next chapter.

CHAPTER VIII

The Subjective Structure

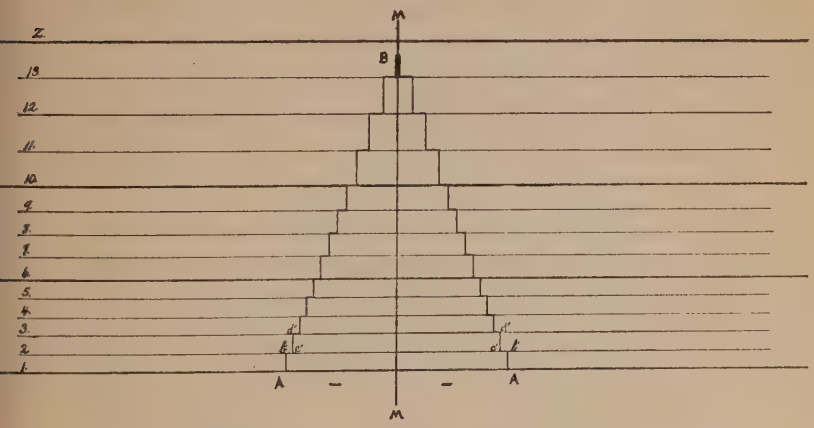
In the preceding chapter it was pointed out that the really vital element in a therapeutic play will lie, not primarily in the states attained by the developing role, but rather in the transitions to those states. And while it is, of course, conceivable than an author might present such a progression of high, and yet higher, states that the contrast between each state and its predecessor would be noticeable to the audience, it is also true that he will, at times, find it desirable to present a temporary retrogression on the part of the character.

Now, since progression results when a positive basic concept becomes operative in the psychic fabric, retrogression will begin the moment that a negative basic concept lodges and becomes operative therein. This phenomenon of progression and retrogression is well illustrated in the composite personality of the clinic; for here the operator, by conveying to a somnambule a privative concept, destroys thereby all of his wonderful powers of sense and of ideation, and converts him instantly into a frozen, cataleptic statue.

Now, in the case of the developing role of a therapeutic drama, if the character has attained maturity before the opening of the play, and if he be conceived of, moreover, as having grown up

under our present social and moral régime, it is safe to say that there is, operating within his subjective depths, an entire structure of limiting and depressing basic concepts, or, as the psychoanalysts call it, a structure of "psychic complexes." These, it is true, may not yet have externalized as such definite subnormalities as diseased conditions. In the majority of cases, however, the structure is there.

But, since the general trend of the play is towards the complete generalization of positive concepts, it follows that all negative concepts must ultimately be eliminated. This structure, therefore, may be graphically represented by a disappearing, or right, pyramid, thus:



In this figure, as formerly, we have a series of 13 scenes. On the clef the line, *AA*, corresponds

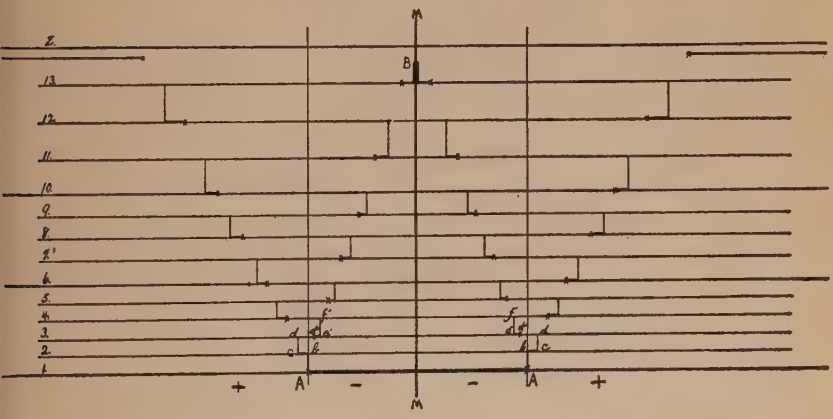
to the character's conscious horizon at the opening of the play. At b' a scene begins which results in the excision of a negative concept at c', and during which the negative structure diminishes along the lines $b'c'$. This process is repeated until, in the final scene, the negative structure vanishes at the point B.

Now, from our consideration of psychotherapy and psycho-analysis, we have seen that advance may take place by either of two routes: a positive concept may be added to the psychic fabric—in which case the corresponding negative concept automatically disappears—and stimulation ensues; or a negative concept may be eradicated from the psychic fabric—in which case the corresponding positive concept automatically appears—and again stimulation ensues. These two methods of expanding a given quantity are clearly exemplified in mathematics by the Law of Signs, for in algebra it will be remembered that a positive magnitude may be indefinitely augmented, either by adding positive magnitudes to it, or by subtracting negative magnitudes from it.

Thus it is that the therapeutic playwright has a choice of two methods of advancing his developing role. He may either add positive concepts to his conscious thought, or he may bring the character to a point where he perceives a causal re-

lation between some negative concept and a depressed condition, in which case he would portray him as consciously abandoning the idea.

Let us, therefore, for purposes of discussion, make an ideal combination of these two fundamental processes, representing the result by a combination of the two figures already employed, thus:



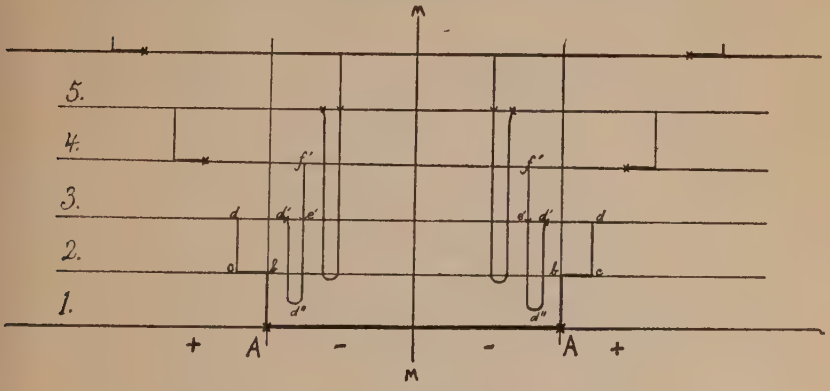
In this figure the line, *AA*, represents the character's outlook at the opening of the play. At the points *b* a positive scene begins, resulting in the acquisition of a positive concept at *c*. During this scene the corresponding negative concept automatically disappears, and the negative structure is diminished by a commensurate amount. At the points *c* growth takes place, bringing the character up to the level of the third scene. At

the points d', however, a negative concept becomes operative, and a scene begins which results in the excision of that concept at e'. During this scene the corresponding positive concept is being automatically acquired, and the positive structure is expanded by a commensurate amount. Thereafter, these processes are viewed as alternating with one another until the final scene-level is reached.

From these considerations it is apparent that the author of a therapeutic play, from the moment that his character begins to develop, up until the time when the final elimination of the negative structure is accomplished, will be dealing in effect with a case of *dual personality*. During those scenes in which positive concepts are dominant, his character will approximate the somnambule: during those, however, in which negative concepts are in the ascendant, his character will approximate the cataleptic. And, as has been said, the more sharply these two personalities can be contrasted, and the more definitely linked their respective states of stimulation and depression are with concepts of good and of evil, the better and more powerful the play will be. As it progresses, however, the somnambule will gradually displace the cataleptic—a circumstance which has a most important bearing upon the structure of the negative scenes.

In the ideal play which we are considering, it will be seen that each negative scene will consist of two parts. In the first portion, in which some negative concept is becoming operative, the character will be tumbling headlong down an abyss of depression—his acquired powers disappearing all the while like vapor. Since, however, the scene is to terminate with the excision of the concept, during the second portion he will be climbing out, with gradually reappearing powers, until, at the climax of the scene, he will perceive what it is that has caused the depression, and will dismiss the concept from consciousness.

Let us, therefore, take a section of our two pyramids upon which we may represent this double nature of the negative scene, thus:



In the accompanying figure the base-line, *AA*, represents, as formerly, the character's outlook

at the opening of the play. In the third scene, at d', a negative concept becomes operative, and immediately all growth that has taken place between A and d begins to disappear, and the character approaches the base-level as far, let us say, as the points d''. Here depression reaches its maximum; here the character begins endeavoring consciously to readjust, and to regain his lost powers. He will recall the fact that formerly he possessed them—that formerly he was not depressed—and these memories will constitute positive concepts which will gradually become operative in his psychic fabric, and will build him back to the level at which the negative concept was acquired. This is represented by the points e' in the diagram, where the excision of the concept is viewed as taking place. Immediately growth occurs, bringing the character up to the points f', or to the level of the fourth scene; and so on.

If the reader cares to go into the subject he will find this dual nature of the negative scene admirably—beautifully—illustrated in many of the dream records kept by practicing psychoanalysts. For instance, in one case, a popular account of which appeared in *Good Housekeeping Magazine* for February, 1915, the patient had dreamed continuously for over fourteen years of fighting. Nearly every night he dreamed that he entered the ring; not once, however, during all

that time, had he failed to be beaten in great style. This fourteen-year period corresponds to the *down*-leg of the negative scene, the depression reaching its maximum, in this case, with the appearance of hysterical blindness. With the loss of vision, however, the patient determined that something must be done. Consequently, he applied, and a month later was admitted, to a New York hospital, where he was placed in the psychopathic ward. This period corresponds to the *up*-leg of the negative scene, and the point to be noted is that the dreams belonging to this portion of the record assume a totally different character. The patient continued to dream of fighting, it is true, but now *always of winning*. And within four days from the time he entered the hospital, he had succeeded, under the direction of the psychoanalyst in charge, in building himself up to a point where the excision of the concept was possible, through the functioning of the conscious faculties. When this occurred sight was regained immediately.

Now, for the practical playwright, there are only two points in connection with these negative scenes that are of real importance. The first is this: when the character is upon the down-leg of the scene, the author should by all means shift the dramatic emphasis from the character to some other, and to some more positive, element in the

play. For, if he allow the attention of the audience to remain fixed for any length of time upon a character who is falling down an abyss of depression, the chances are that the same negative concept which is causing his fall will be communicated to the mass mind beyond the footlights. Should this occur, it would destroy in the audience whatever states of stimulation the author might have succeeded in building up. This shift of emphasis, of course, can be accomplished simply by shifting the thread of dramatic action over to a minor role.

The second point to be noted is that the moment the character takes a decisive stand, and begins to fight for readjustment, he is being actuated by a positive, not by a negative, premise. The second portion, or the up-leg, of the negative scene, therefore, although still negative as compared with other scenes in the play, is, nevertheless, *positive in nature.* Consequently, during its course the attention of the audience may, without danger to its own states of stimulation, be centered again upon the developing role. Hereafter, this latter portion of all scenes of depression will be spoken of as *the positive leg of the negative scene.*

Let us now consider a sequence of scenes which may be regarded as typical of a therapeutic play. In the opening lines a train of thought is, in some manner, started in the character's mind—perhaps

by the occurrence of the play's *theme,* which catches his attention and upon which he reasons inductively. At any rate the train of thought culminates in the acquisition of a positive concept, and immediately growth takes place. This sudden growth corresponds to the *making* of the current in the primary coil, and during its progress the positive member of the temporarily dual personality is dominant. In the next scene, however, a negative concept, a product of past modes of thought, becomes lodged in the character's consciousness. When this occurs his stimulation and his powers begin to disappear, and as soon as the process is well under way the emphasis of the play shifts. Some other character takes up the thread of action, and retains it until the developing role has struck rock bottom and begins to readjust. This sudden disappearance of growth corresponds to the *breaking* of the current in the primary coil, and during its course the negative member of the dual personality is in the ascendant. In the later half of the scene, however, the character begins to rebel against negative conditions and their accompanying depression—this rebellion being precipitated, perhaps, by a recurrence of the play's *theme.* At any rate when it occurs the negative scene becomes positive in nature, and the emphasis is shifted back to the developing role. This portion of the scene is full

of internal strife and turmoil—conditions which will be faithfully reproduced upon the outside, as we shall see later on. However, the scene culminates in the character's recognition of the negative concept as the source of depression, and with its excision from consciousness. When this occurs, sudden growth takes place. With the excision of the negative concept, however, the corresponding positive concept has automatically appeared, and this provides the starting point for another train of inductive reasoning, which will result in the acquisition of another positive concept, and yet further growth.

Such, as the present writer conceives it, is the generalized statement of the mental processes which the author of a therapeutic drama must concede to his developing role. These interior processes bear a most important and determining relation to the remaining elements of the play, as will appear from a consideration of the next chapter.

CHAPTER IX

The Play-Personality

Returning to our premise for a moment, it will be remembered that the author's sole aim in writing a therapeutic play will be to suggest to his audience the immanence and actuality of the Universal. It will be remembered, also, that the Universal has been defined as a complete generalization of all positive attributes. Let us examine this proposition carefully: the play must suggest that which is a complete generalization.

Now it is obvious that no author can ever reduce to definite statement the vast sum of all possible attributes, for, as has already been pointed out, these are infinite in number. The most he can do is to suggest the existence of such factors as, by their indefinite interaction, might logically give rise to *any conceivable* attribute. He would then proceed to generalize these factors to whatever extent his skill and time permitted, and when this had been done he would have conveyed as adequate a conception of the Universal as could be hoped for.

But, as we have seen from the earlier chapters, organic evolution may be accounted for upon the supposition that there subsists within the evolving entity, an element which originates, a receptive and executive element, and a physical instrument

through which these two function. Moreover, from our consideration of the analysis of matter, page 107, we have found that evolution begins, not in the organic, but in the inorganic world.

Thus it is that all forms, and consequently all attributes, that have yet appeared in the natural order may be accounted for by postulating of manifesting Nature the same inner, three-fold constitution that appears in man. And if we extend our conception to the Universal, which includes both manifested and unmanifested Nature, we are able to explain thereby its possession, real or potential, *of any attribute of which it is possible to conceive.* This, of course, is a self-evident proposition: for to invest the Universal with an originative element, is to invest it with the power of choice; and to concede it an executive element, is to invest it with the power to create that which it chooses to originate; while to view it as embodying, also, a universally distributed material element, which we may equate with the ether of physics, is to supply it with the potter's clay in which its desires may be wrought out in actual form. To postulate these elements of the Universal, however, is to invest it with all of the characteristics of personality.

Therefore it is that the author of a therapeutic play, who would side-step the difficulty of summing up the attributes of the Infinite, may seize

upon the elements of personality and generalize them throughout his work.

Let us examine this proposition a little further: to generalize a concept is to abstract the idea of the quality conceived of, from its association with any particular thing.

It must be noted, however, that these three elements of personality have already been conceded to the developing role. The author's first step in generalizing them, therefore, would be to abstract the idea of them from association with that particular role, and to concede them, not only to the character, but to the environment in which he is set as well.

When this is done the author will view the entire cast of his play as a single personality, composed of an originative element, a receptive and executive element, and a physical instrument—in this case the collective brain and body of the troupe—through which the first two function. His play, therefore, becomes merely the statement of the interaction occurring among the component parts of this play-personality. And this interaction, it will be remembered, takes place always according to one definite law—the identical law which governs the individual, and the composite personality of the clinic, and which has already been summed up briefly in the mathematical ratio, $x:y::y:z$. As will be seen, this view of

the matter reduces all questions of dramatic technique and of character reaction to the simplest possible terms.

Now viewing the cast as a single personality, the author's first task would be to determine just where, within this composite organism, the originative element lay. However, the central character himself is to be represented as developing—a process which, since it involves the acquisition and excision of concepts, implies the activity of an orginative element as it functions through his conscious faculties. We cannot avoid the inference, therefore, that during those moments in which the developing role is actively engaged in acquiring or excising a concept—in other words, during the positive scenes, and during the positive leg of the negative scenes—the originative member of the play-personality resides in the developing role himself.

The author's next task would be to determine just where, within the proscenium picture, the second, or psychic member of the play-personality lay. And obviously, during the scenes in which the principal role himself plays the part of the originative element, the role of the psychic member will be filled by the remaining portion of the cast, which, during these scenes, will respond to the character according to the one law of subjective mind.

This, the subjective relation of the environment to the developing role, is a matter of prime importance. It means not only that the environment will accept, and carry out to its rigorously logical result, any suggestion conveyed to it by the originative role, but also that it will, at all times, present an exact correspondence with his inner, mental states.

This correspondence between the character's conscious thought and his environment holds good even during the earlier portions of the negative scenes, when the character is not actively engaged either in acquiring or in eradicating concepts, but is simply responding blindly to some negative idea. In these portions of the negative scenes the conditions mentioned above are reversed: the environment is playing the part of the originative element in the play-personality, and the character, the role of the subjective, psychic member. However, by virtue of the mere fact that he is responding to a negative concept, the character has consciously abandoned the originative role, and has himself attributed it to the environment. This arises from the fact that the basic idea involved in every negative concept is the idea of an opposing something possessing the power of origination, and consequently the power to do harm. And when this basic concept becomes impressed upon the subjective member

of the play-personality, this subjective member, accepting the idea as a premise and working it out to its rigorously logical result, does, in fact, assume, relatively to the character, the originative role. This is a condition which obtains in *Romeo and Juliet,* in which the lovers, starting with a set of negative concepts, play the part of the psychic member out to its bitter and disastrous end, without once assuming the originative role themselves.

Thus it is that at all times, during positive and negative scenes alike, an exact correspondence between the character's mental states and his environment must be maintained: the only difference is that during the positive moments the originative element in the play-personality resides in the developing role, while during the negative moments the role himself has conceived of it as residing in his environment.

Now upon the basis of an exact correspondence between the character's mental states and his environment, the people by whom he is surrounded will correspond to basic concepts, or "complexes," operative in his own mind; while their relations to him and to one another, and the conditions to which they give rise, will represent accurately his states of consciousness. The author would, therefore, consider what particular line of development he wished the central figure to

pursue—what particular concepts were to be added or excised from his conscious thought—and would then proceed to cast the minor parts, and to plot his play, in accordance with these considerations. And here it may be observed that if each character in the play be viewed as embodying one, clear-cut concept, the role itself will become a clear-cut role, and the character a genuine literary creation.

Now at the opening of the play the central figure will be surrounded by such and such characters, each corresponding to a concept in his own mind. These at first will not be clearly differentiated into groups. The moment that the character begins to develop, however, a line of demarcation will appear among them, and thereafter the author will be dealing with two factors in the environment—a group of characters corresponding to the positive concepts of the developing role, and a group corresponding to his structure of negative concepts. As the play progresses the first group will be augmented, growing all the while more and more definitely positive in nature: the second group, however, will constantly diminish, growing more and more definitely negative in nature, until finally it is eliminated altogether.

Thus, upon the basis of a strict correspondence between the conscious thought of the central fig-

ure and his environment, the environment may be made to reproduce upon the outside, and to undergo, the identical development that is taking place within the mental depths of the character himself. It is this circumstance above all others which renders a therapeutic drama possible, for it permits the most interior processes to be objectified upon the boards. It gives rise, also, to a secondary process which is of extreme importance, and which will be discussed in a subsequent chapter.

Now, as the play progresses, it is apparent that those readjustments between positive and negative which are taking place in the character's mind, will find their counterpart in readjustments taking place between the positive and negative groups in his environment. And since the positive is finally to dominate, it follows that the positive group is to be augmented in some fashion at the expense of the negative.

How this is to be accomplished is, of course, a matter for the individual artist to solve. We may observe, however, that it must take place in one of three general ways. A character may be added to the positive group. His appearance would then correspond to, and be coincidental with, the acquisition of a positive concept on the part of the developing role: his presence would then give rise to new conditions and to new rela-

tions in the environment, which would accurately represent the states of consciousness resulting from the acquisition of the concept. Or a character may be subtracted from the negative group. In this case his disappearance would correspond to, and be coincidental with, the excision of a negative concept. Upon his disappearance the conditions and relations to which his presence gave rise would automatically vanish, and again the environment would have undergone a change. Or, finally, the leading role's attitude towards a character, and towards the idea for which he stands, may change. In this event the character in question would pass from the negative to the positive group—the transfer corresponding both to an excision and an acquisition of concepts—and thereafter the character would be presented in an entirely new light.

Now, just as in the case of the varying states of the developing role himself, it will be seen that the really vital element in a process of this kind will lie, not so much in the intensity of the struggle that must necessarily take place between the positive and negative elements in the environment, as it will in the *fact of readjustment* between them. Consequently, the more frequent, definite and clear-cut these readjustments can be made, the greater suggestive power the play will possess. As it progresses, therefore, we cannot

avoid the inference that the author will find it desirable—perhaps even necessary—to accelerate these environmental readjustments, just as he will wish to accelerate the character's oscillations between states of relative depression and stimulation.

Here a difficulty will present itself to any author whose technique is hampered by laws of nineteenth century realism; for, if he attempt to adhere to photographic methods, he will find it impossible to accelerate the readjustments between positive and negative in the environment in the same ratio at which they can be accelerated in the developing character himself. The reason for this is simple; in the environment he is dealing with entities functioning under the apparent conditions of space and time; in the mind of the developing role, however, he is dealing with mental images which are not so conditioned. And yet, if actual results are to be obtained, the correspondence between the inside and the outside can by no means be sacrificed.

Under these conditions, there will be an inevitable tendency on the part of the author to shift the action of his play more and more definitely over into the psychic realm, where the primary conditions of time and space do not obtain, and where the figures of the environment may be handled with the maximum amount of ease.

Such a shift of action into the psychic realm requires no revision of the play's premise, the establishment of no new theatrical convention, nor, indeed, any line of demarcation between the psychic and the objective worlds. The only thing that is necessary is to apprise the audience of the fact that, during the positive scenes, and during the positive leg of the negative scenes, when both the character and the environment are in states of relative stimulation, discrepancies in time and space are likely to occur. Thereafter, the moment that a state of stimulation supervenes, the spectator will expect new laws to apply. When this premise has once been planted the author may, during the scenes of stimulation, make his characters conform more and more definitely to the laws governing mental images. Their appearances and disappearances can be made more and more nearly spontaneous, and their readjustments more rapid. The moment that a negative concept becomes dominant in the mind of the leading role, however, the author will return without comment to such laws of realism as are compatible with the relative negativity of the scene. This progressive elimination of the laws of time and space will constitute an added element of terrific suggestive power.

Let us, therefore, consider a sequence of scenes which may be regarded as typical of a therapeu-

tic drama, at a point where this elimination of the conditions of time and space is to be got under way.

The character, we will say, at the close of a certain scene has acquired a positive concept. Immediately afterwards growth takes place, and the characters of his environment undergo a corresponding readjustment in their relations to him, and to one another. In the next scene, however, the character expresses a certain fear, arising from his structure of negative concepts. The moment that this occurs he has conceded the originative role in the play-personality to his environment, and the character corresponding to the negative concept that has given rise to the fear conveys to him some negative suggestion. As this becomes dominant the character begins tumbling down an abyss of depression, and the emphasis of the play shifts to some member of the positive group, who, for the time being, takes up the thread of dramatic action. This condition continues until the character begins to fight for readjustment, and until the scene becomes positive in nature. Finally a point is reached where stimulation is of the same degree that it was at the moment at which the negative concept became operative, and where the excision of the concept is effected. Immediately thereafter sudden growth takes place, and the environment under-

goes a corresponding change through the excision, temporary or final, of the corresponding character. Here a second positive scene begins, precipitated, perhaps, by a recurrence of the play's *theme,* and throughout its course progressive degrees of stimulation occur. It is here, let us say, that the conditions of time and space shall begin to be eliminated.

As the scene progresses the characters involved in it gradually—almost imperceptibly—begin to obey the laws of the psychic realm. Their entrances and exits are more and more intimately related to the spoken thought of the developing role, and their readjustments become more rapid. During this scene the time, perhaps, is noted; and when the next period of relative depression occurs it will be observed that, although the scene has been of appreciable length, it has occupied, according to the stage clock, perhaps only the fraction of a second. During the next period of stimulation the characters will yet more nearly conform to the laws of the mental world, and when this is done the discrepancies in time and space may be extended, until finally a character may appear who is subsequently discovered to have been many miles away at the time—a circumstance which, during the next negative scene, will be explained by the fact that the developing role had been clairvoyant.

Now the explanation of such phenomena, like the explanation of the periods of stimulation and depression on the part of the developing character, and of the readjustments taking place in his environment, will involve a process which stands to the therapeutic play in the same relation in which the secondary winding stands to the induction coil. It is in the involutions of this secondary process that the extreme voltages will be developed, as will appear from a consideration of the next chapter.

CHAPTER X

The Personality of the Background

If the reader will pardon the repetition we will again revert to the conditions of the play: a therapeutic drama must convey to the audience a conception of the immanence and actuality of the Universal. And the Universal, as redefined in the previous chapter, is a complete generalization of the factors of personality.

Again, to generalize a conception is to abstract it from its association with any particular thing.

Now the author of a therapeutic play has already abstracted the elements of personality from the developing role, and has generalized them somewhat by attributing them, not only to the role, but to the cast as a whole as well. These factors, however, may be generalized yet further, and in the following fashion: the developing role himself may be represented as recognizing the elements of personality, as abstracting them from their particular associations, and as generalizing them—thus reproducing upon the boards the identical process which the author has followed in the composition of the play itself.

Hereafter, this, the character's recognition and generalization of the elements of personality, will be spoken of as the *secondary process of generalization,* while the process which has taken place in

the author's mind, and which has determined the structure of the play, will be referred to as the *primary process of generalization.*

Now, it may be asked, how is this secondary process of generalization to be conveyed to the minds of the unthinking audience? The answer is, in the simplest and most natural manner imaginable; for, if the author has so plotted his play that his character shall oscillate perceptibly between stimulation and depression—oscillations which produce their exact correspondence in the environment—he can scarcely avoid allowing the character, sooner or later, to become conscious of these phenomena. And the moment that he becomes conscious of them the character will begin to work upon them inductively; for it is characteristic of the human mind to seek a cause for all observed action. As the play progresses, therefore, and the character perceives that time after time negative concepts cause depression, and positive concepts stimulation, he will gradually arrive at the conclusion that in his truly *normal* state only positive concepts have, or shall have, any place.

These inductive processes, started in the first instance, perhaps, by the occurrence of the play's *theme,* and kept up by the occurrence of alternating phenomena of stimulation and depression, constitute the method by which the character ac-

quires fresh positive concepts, or eradicates old, negative ones—to the precipitation, as we have seen, of more phenomena, upon which he again works inductively.

Now, after the character has observed that his own personality responds instantly to positive and negative concepts, and after he has exercised for a while his powers of selection to permit only positive concepts to become operative in his mind, he will build himself up to a point where he is able to perceive that his environment responds to him, and has always responded, in identically the same manner. He will now consciously alter his thought to attain any desired end, and will observe that his environment likewise becomes altered. However, when he has observed that the environment obeys the law of personality, there will be an inevitable tendency upon his part yet further to generalize that law—just as science, by observing its repeated operation, has at last completely generalized the law of gravitation. Again he will abstract the qualities of personality from their particular associations, and this time will attribute them directly to the background, or to the world of Nature, whose presence upon the stage is indicated by means of paint and canvas.

We cannot avoid the inference, therefore, that as the play progresses the character will grad-

ually acquire the idea that he is living in the midst of a universal something, whose distinguishing characteristic is its response to conscious thought. And then, since a strict correspondence is at all times to be maintained between the concepts of the developing role and his surroundings, the author will endeavor to indicate, by every resource of art and stagecraft, the presence in the world of Nature of just such a responsive element. This growing responsiveness will manifest as phenomena occurring in proximity to the character—phenomena which are definitely linked, in the relation of effect to cause, with his mental life as it is expressed in his actions and in his lines.

Now the point to be noted is that responsiveness is the very earmark of personality, and when this quality has been built up, first in the character, then in his environment, and finally in the world of Nature, the author will have generalized the factors of personality as far as the mere structure of his play will permit.

From the preceding paragraphs it will be seen that this secondary process of generalization falls roughly into three stages—a circumstance which, in the ideal play we are considering, provides us with three natural act divisions. Upon this basis, therefore, in *Act I* the character will be occupied primarily with his own oscillations between stimulation and depression. His environment is

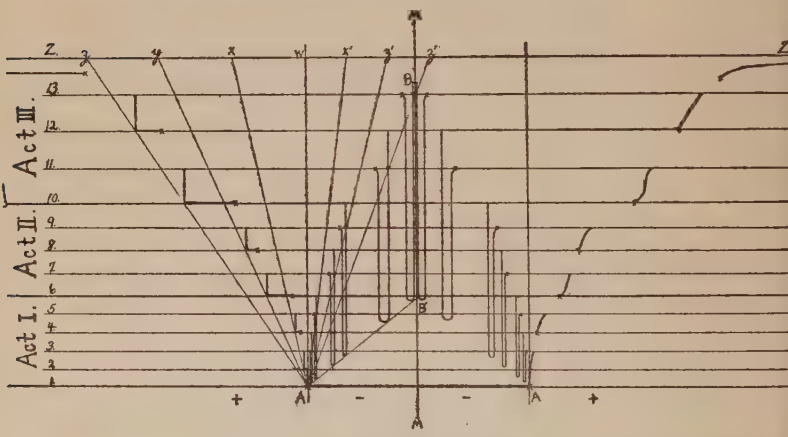
all the while undergoing similar changes, but these do not come within the range of his consciousness until, by the repeated selection of positive and the repeated elimination of negative concepts, he has built himself up toward the close of the act to a point where he is able to perceive these environmental readjustments.

In *Act II* the character no longer looks to his periods of stimulation and depression, although these continue; but he looks to, and works inductively upon, these more general phenomena of the environment—to the tremendous acceleration of his own and of the play's development. Toward the end of the act, however, the personality of the background begins to appear, and before its close the character has built himself up to a point where its phenomena, in turn, pass within the range of consciousness.

In *Act III* the character's attention is no longer occupied either with phenomena of stimulation and depression, or with environmental readjustments: on the contrary, it centers upon these yet more general phenomena of the background—to the yet further acceleration of his own and of the play's development—until the climactic scene of the play is at last precipitated.

Thus it is that the author may lead his audience by successive steps to a generalized conception of personality.

From these considerations it is apparent that we must again modify our figure of the double pyramid, in order to take into account this natural act-structure, as well as the increasingly generalized nature of the concepts acquired and eradicated as the play develops. This has been done in the accompanying diagram.



Here, as formerly, we have a sequence of 13 scenes, the act divisions falling between scenes 5 and 6, and between scenes 9 and 10. The line, *AA*, represents the character's conscious horizon at the opening of the play, and the line, *ZZ*, his outlook at the close of Act III. The diminishing pyramid, *ABA*, represents the structure of negative concepts which precipitate the negative scenes with their moments of relative depression, and which keep the character oscillat-

ing between the scene level and the line *AB'*. Now, considering for the moment only that portion of the figure which lies to the left of the principal axis, *MM*, the three triangles, *Awx*, *Axy* and *Ayz*, represent areas of generalization. In the first belong the character's concepts which pertain primarily to his own personality, and which are derived from observing his own periods of stimulation and depression. In the area *Axy*, however, belong the more generalized concepts pertaining to the personality of the environment, derived from observation of environmental changes. In the area *Ayz* belong the yet broader concepts pertaining to, and derived from observation of, the growing personality of the background. The corresponding negative areas fall in the same order to the right of the secondary axis, *Aw*.

Now it will be remembered that ascent may be made either by the positive or the negative route, and in the play we are considering, which presents an ideal combination of these two methods, this circumstance breaks the line of advance up into sections—a section for each scene—whose starting-points, marked by small crosses, lie alternately to left and right of the axis *Aw*. Beyond these starting points the amount by which the character's positive concepts are generalized, or the negative structure diminished, in any given scene,

is measured by the distance, left or right, gained during that scene. The vertical lines, on the other hand, which bring the character up to the next scene-level, represent the amount of growth resulting from the acquisition or excision of such concepts.

Now, in the accompanying figure, it will be observed that in *Act I* the starting-points of the scenes are viewed as oscillating only within the area *Axx'*—in other words, the character is observing, and working inductively upon, only those phenomena which pertain to *his own personality*. In *Act II*, however, the starting-points of the various scenes oscillate more widely, within the area *Ayy'*—in other words, although personal phenomena continue, the character is occupied mainly with the more general concepts arising from observation of the *personality of the environment*. But while the act is in progress the *personality of the background* begins to appear, and at its close the character becomes aware of its immanence. And in *Act III* he is occupied mainly with concepts arising from the phenomena of the background, and consequently, the starting-points of the scenes must be represented as oscillating within the still more extended area *Azz'*.

In the right hand half of the figure the author has abandoned the convenient but arbitrary method of representing generalization of concepts and

character growth by horizontal and vertical lines respectively, and has simply plotted the resultants of these two processes. The result is two broken, but complementary, curves of ascent, one lying in the negative and one in the positive area —in this case to the left and right of the secondary axis.

Now, considering the right-hand portion of the figure for a moment, it will be observed that in scene 13 the negative structure is viewed as vanishing. When this occurs, the positive concepts will become *completely* generalized—a condition which obtains hypothetically at the level *Z*. It is obvious, therefore, that the amount of generalization attained in this scene must be infinitely great, and that, adequately to represent it, the horizontal component of the positive curve must be made infinitely long before the character can ascend to the final level. Consequently, our positive curve turns sharply at this point, and, although it will constantly approach the line *Z* as a limit, by the terms of the case it can intersect it only at infinity. We may, however, conceive of this final scene as bringing the curve *just as close to the line Z as we please.* This, translated into terms of character expansion, means that we may present the central figure as displaying any degree of attainment that we choose, once the negative structure has been eliminated.

However, before discussing this climactic scene of the play, in which the positive curves turn suddenly out towards infinity, the author wishes to call attention to two other points, *viz:* the effect of this process of generalization upon the developing role, as compared with the other characters of the play; and the nature of the phenomena which it precipitates in the background.

Now, in the character himself, it is obvious that these inductive processes by which he acquires and generalizes concepts, will give rise, as it were, to an *inner margin of personality* which finds its correspondence, not in any particular person or thing in the environment, but rather in the completely generalized personality that appears in the world of Nature as the play progresses. This margin of personality will increase in breadth as the generalizations which give rise to it become broader and broader. In each succeeding scene it will lift the character more and more definitely away from the groundwork of the play. He will thus never become merged in either the positive or the negative group, but will move against them, a figure set, as it were, in high and growing relief. Now, in the negative scenes in which the character is depressed below normal, it is this margin of personality which keeps before him the memory of less depressed conditions, and which provides him both with the faith that read-

justment is possible, and with the will to readjust. In the positive scenes, also, it is this margin of personality which enables him to stand back, even from those persons who correspond to his positive concepts, and to perceive the workings of the law to which they unconsciously respond. Thus, as the play develops, the central figure will draw further and further ahead of both the positive and the negative characters, who, representing particular concepts, may not be depicted as perceiving and as generalizing the law.

Now, in regard to the phenomena by means of which the author will suggest the immanence of a personality in the background, a little consideration will show that these may be of any kind which the imagination of the artist can devise. For, upon the supposition that the Universal embodies the three elements of personality, and upon the supposition that the Universal includes the *all,* there is obviously no reason why the originative element, as it appears in the individual, should be confined in its action upon the psychic element to the limits of that individual's physical personality—nothing, save the fact that the individual himself habitually conceives of it as operating only in that fashion. When this limiting basic concept is shattered, however, the originative element, as embodied in the individual, is set free. It may then start whatever trains of causation in

the universal psychic it chooses, and whenever and wherever it will. This is what happens, apparently, in the psychic clinic, where hallucinations conforming to tests of materiality may be projected at any point in space.

Now it should be observed that a character who is consciously generalizing his conception of personality, is shattering the basic concept which limits his powers of origination in the manner described above. As this process continues, therefore, we shall expect his conscious thought to be recorded in the universal psychic—in other words, upon the world of Nature—and that the character of the phenomena will be determined by nothing save by the nature of the concepts which call them into being. Thus it is that the author of a therapeutic drama may give his imagination free rein; or, if he will but turn to the histories of miracle and of magic, explaining their narratives upon the basis of a three-fold Universe, he will find as large an assortment of phenomena as he is likely to require.

However, although the phenomena presented may include all things—from the local modification of natural laws to the association and dissociation of matter—they will be definitely limited in intensity and in magnitude by the amount of development portrayed in the leading role up to the moment of their occurrence. For, if they be

not adequately motivated in terms of character, the author will be dealing with the supernatural. The audience will then fail to follow, and half the power of the play will be lost.

But let us return to the climactic scene, in which the positive curves stretch away suddenly to complete generalization, and examine, as it were, a cross-section of the play at this point. For three acts, perhaps, a reiterated *theme* has subtly and skilfully insinuated the basic idea of the play into the ears of the audience. The leading role has eliminated from his consciousness many negative concepts, and each time stimulation has ensued, until the spectator now feels that in the truly normal order no negative concepts, and consequently no depression, can exist. Moreover, these oscillations from positive to negative, and back, have kept the idea in his mind of an immanent and active cause. Next, he has seen the environment come within the pale of personality, and has watched the principal role grow to a place where he can manipulate the conditions of his life at will. Finally, he has seen the background pass under the same law, and become increasingly responsive to the character's conscious thought.

Now it should be borne in mind that the climactic scene of such a play may be approached either by the positive or the negative route—in

other words, the final step in development may involve either the acquisition of the last positive, or the eradication of the last negative, concept. If the first is the case, there is a sense of growing calm: if the second method has been followed, however, there will be a sense of growing struggle. But in either case, as we have seen from our consideration of the negative scenes, the character will be acting from a positive premise. The scene, therefore, even though negative in nature, becomes positive, and consequently deeply psychic, toward its close. Because of this, the minor characters are now conforming more and more nearly to the laws governing mental images, the elimination of the elements of time and space has been made most nearly complete, and the powers of the leading role himself are expanding with the utmost rapidity. All the while the background is being personalized and personalized through the recurrence of phenomena, until the audience is momentarily expecting it to assume some strange new aspect.

Finally, however, if the positive route has been followed, the generalization of positive concepts is most nearly complete. All particular concepts, and consequently all characters corresponding to them, vanish, and a moment of intense quiet supervenes. Or, if the negative route has been followed, struggle becomes severer and severer

until finally the last negative concept is eliminated. When this occurs the character corresponding to it disappears; a moment later all positive concepts become generalized, and again a moment of intense quiet supervenes.

Now what phenomenon shall be represented as occurring in the background that shall be as positive and as general in its nature as the last mental act which calls it forth? Obviously, there is only one adequate correspondence—momentary, but intense, general and overpowering *light*.

Such a phenomenon is, of course, in accord with the statements of those who have most nearly approximated the state of mind contemplated; but whether it be in accord or not, its suggestive effect upon an audience, especially if its passing be preceded by a darkened stage, would be simply terrific.

This moment, in which the background is represented as flashing light, is supposed, of course, to mark the merging of the individual and the Cosmic consciousnesses. It is the "marriage of Heaven and Earth" looked forward to and described by all of the great religions; and adequately to dramatize it should be the sole aim and purpose of the therapeutic playwright.

His play, however, need not stop at this point; nor need it suffer any anti-climax thereby. On the contrary, after a recrudescence of negative

concepts, it might work again and again to the passing of the light, until the character has become steady, and is no longer human but divine.

The dramatist would then view his character as perceiving that the individual originative element can, and always is, initiating trains of causation in the universal psychic—thus weaving the web which we call circumstance. He would view him as perceiving, also, that the trains of causation started and maintained in the individual psychic by the Universal originative—the action taking place subconsciously in the majority—is that which gives rise to the continuous phenomenon of life. He will thus represent him as perceiving that the individual and the Universal, are, in fact, *one;* and that he, like the Cosmos, is a self-maintaining, self-evolving unit. At this point all conceivable phenomena compatible with cosmic advance might be associated with his personality, until at last he might be represented as passing beyond the range of sense perception.

CHAPTER XI

Dramatic Selection and Conclusion

In the foregoing pages the author has endeavored to deduce a method by which the laws of suggestion, upon which the entire fabric of the theater depends, may be turned by the playwright to some great, constructive purpose. The discussion has of necessity been purely theoretical in nature. However, remembering that theoretical work is the basis of all practical achievement, let us sum up the conclusions arrived at in as brief and as tangible a form as possible.

1. A drama, in order to apply constructive suggestion in blanket fashion to large gatherings of individuals, must take as its premise the most general positive concept possible; for the broader the premise, the greater the number of particular cases of depression that it will cover. And, as we have seen, the broadest premise that it is possible to assume is the immanence and actuality of Universal Being.

2. Remembering Braid's dictum, that *hypnosis is always the result of a process of mono-ideism,* or the concentration of the entire attention upon one object or idea, a therapeutic drama must adhere most rigidly to its premise—a premise which can best be conveyed by depicting the effect of Universal Being upon the individual.

This requirement of mono-ideism lands us in a structure in every department of which the elements both of repetition and of advance obtain.

3. In the developing role, sharply defined states of stimulation above normal, and depression below, must be presented. These oscillations must, in the lines of the play, be linked directly, and in the relation of effect to cause, with the character's growing recognition of the Universal.

4. A strict correspondence between the character's conscious thought and his immediate environment must be maintained; and all environmental changes must be linked directly, and in the relation of effect to cause, with the same process of growing recognition.

5. As this process of recognition continues, bringing about repeated generalizations of positive concepts, a growing personality must be indicated in the background, until the very atmosphere of the theater becomes alive with an unseen, but with a definitely responsive, presence.

These five rules may be condensed yet further; for if an author assume the existence of personality with respect to his developing role, and, thereafter, subject this personality to successive and rapid expansions throughout every department of his work, he will most assuredly approximate therapeutic results.

Plays which conform to the above requirements, and which courageously present the supernormal developments of character involved in them, will constitute a radical departure from the realistic drama of the last century. The point to be noted, however, is that they will transcend the laws of past realism, not because of a less faithful portrayal of life, but because of a wider outlook on the part of the author, and because of a more intelligent and comprehensive application of the *law of dramatic selection* than has obtained hitherto.

The law of dramatic selection is easily defined: it is that necessity which requires an author to pass over the commonplace and the trivial, and to select, perhaps from an entire lifetime, only those few pivotal moments in character development that are dramatically interesting—only those steps by which the story is actually advanced—and to discard all else as valueless.

But if the vision of the author be such as to render the steps selected typical, not only of the character whose story he is presenting, but of the audience and of humanity as well, his work is said to possess the quality of *universality*. In the past, such compositions have frequently been incorporated into the sacred writings of the race which produced them; always they have been considered great, and have survived all change of custom.

We cannot avoid the inference, therefore, that the greatest play is the play which, like the embryo, most completely epitomizes racial experience during the course of its development.

Now, looking back over racial progress, from the point where the human mind first emerges from the gloom of unrecorded history, to its present highly sensitive and cultured state, the one fact that stands out saliently in the complex of conquest and of change is this: no advance is perceptible until some race, or some portion of a race, had transcended its primal beliefs in animism, and had arrived at a monotheistic conception of the Universe. Psychologically this could not have been otherwise: for animistic beliefs are beliefs in the existence of overruling, malignant powers; and it was not until these negative basic concepts had been dissipated that the racial mind began to be released from a conditon of cataleptic recoil. Then, and only then, was this mind able to express itself in the development of the arts and sciences. It is these circumstances that have given rise to the dictum that *the history of civilization is nothing more nor less than the history of the development and spread of monotheism.*

Therefore it is, also, that the modern playwright who would most completely epitomize racial experience, could not do better than select for purposes of dramatic presentation, those

pivotal moments by which the individual mind passes from the domination of negative concepts —which are nothing more nor less than the disguised beliefs of animism—into the conception of such a pantheistic-monotheism as is contemplated in the foregoing pages. And the fact that therapy will follow naturally in their wake is an additional, and a highly practical, reason why such transitions should be presented. Moreover, if the presentation of such transitions should become the general aim of authorship, it would give rise to a drama whose effect upon the social fabric would lie beyond the range of wildest conjecture.

Before closing, let us examine the conditions under which a play of this type would receive its premier. There are today thousands of people in the United States who accept such a pantheistic-monotheism as the very corner-stone of their lives. Hundreds of them, through an especially vivid realization of the immanence and actuality of Deity, have experienced some inner readjustment for the better, and it is safe to say that one or more of these would witness the play. Now if, during its course, author and actor could bring about another such vivid realization, the chances are that the same inner readjustment would take place again—to the elimination of whatever depressed conditions might have ob-

tained at the time. Suppose this should happen, and suppose the fact should become known. The news would not only attract growing numbers of people, but would constitute a basic concept in the popular mind, creating just the conditions which would render further readjustments possible. Once the thing started it is highly probable that it would assume the proportions of an epidemic—only instead of an epidemic resulting in deaths, it would be an epidemic resulting in cures.

Such waves of psychic stimulation, with all of their accompanying phenomena of physical cure and of supernormal states, have swept western Europe from time to time. In the past their progress has been written in the blood and ashes of heretics, and of those accused of witchcraft. The roster of such martyrs runs into the thousands. Nor, when one stops to consider the amazing rapidity with which these psychic contagions have spread, until at times entire provinces had been involved, is one surprised that those in authority resorted to drastic methods, and endeavored to stamp them out before they had completely revolutionized the existing order. The history of the Albigeois, the Montanists, the Paulicans, the Huguenots, and of many other of the so-called heretical sects, furnish instances of such phenomena on the part of the mass mind; and the author herewith attaches the terse and suspicious com-

ment of a neurologist of the old school in regard to one of them:

"Such nervous conditions," he writes, "show great contagiousness. In the beginning of the eighteenth century a single Clavinist priest, hailing from the village of Dauphinè, was sufficient to impart a prophetic spirit to the entire population. By a magnetic inspiration of this spirit through the mouths of some persons, who afterwards communicated it to others, no less than eight or ten thousand prophets arose in Dauphinè, Vivarais and the Cevennes. Men, women, children, old men, all prophesied the future. Children, three years old, who had never before spoken anything but the *patois* of the province, now, during the trance, spoke the purest French with astonishing ease. . . . . " (*Hypnotism;* Fredrik Björnström.)

Now, since these things are so, and since tremendous power lies occluded within the popular mind, may not America, with her genius for things practical, harness such unseen Niagaras—to the general well-being of mankind? In doing so she would have revivified a theater that is already obsolescent, and would have created a truly American drama, based upon truly American ideals.

The author, however, who undertakes America's investiture, will not accomplish his aim by

looking to Europe, or to the past. On the contrary, since there is in every human being a medium which works to its result by means of the purest sequences, the palm will go to him who, starting with the broadest premise, can thereafter most completely emancipate Cinderella from the smothering toils of sterile criticism—and from slavery to her pots and pans.

One word more: the critic and the student of dramatic literature may not agree with the author in holding that a therapeutic drama is the next logical step in the development of the stage. Before dissenting, however, let them reflect that the drama is essentially religious in nature: that no matter in how many different lands it may have found independent origin, it originated always in some form of worship. Let them reflect, also, that, whether we be dealing with the development of biological species or with the development of institutions, development itself appears always to go in cycles, each cycle reproducing the starting-point of the previous cycle, but always at a higher level.

THE END.

The Atomic, Corpuscular and Electronic Theories of Matter

The human mind has always demanded an harmonius universe—a universe which, despite outward appearances, is not a fortuitous combination of totally unrelated factors, but which is, in itself, a homogeneous unit.

This primary intuition found expression during the Middle Ages in widely accepted theories concerning the transmutability of matter. It gave rise, also, to endless search on the part of alchemists for the *philosopher's stone,* which by its touch should convert the baser into the more precious metals. It is interesting, in the light of modern discoveries, to note that until as late as the Napoleonic wars certain individuals claimed actually to have accomplished this feat of transmutation.

As element after element was isolated from its compounds, however, and as alchemy merged into chemistry, a spirit of skepticism grew up among the searchers, who were now occupied with the practical application of known laws rather than with physical and metaphysical speculations. The *Atomic Theory* of matter was then put forward. It was arrived at in the following fashion:

It was observed that the elements, such as hydrogen, oxygen, chlorine, calcium, iron, gold,

etc., combined with one another in proportions that remained fixed. For instance, two parts of hydrogen combined with one part of sulphur and four parts of oxygen to produce sulphuric acid; and if any of these elements were present in excess of the required amounts, just that excess remained after chemical action had ceased.

To explain this phenomenon of constant ratio it became necessary to postulate a certain inner structure for each of the elements. Consequently, science came to regard them as made up of minute particles called *atoms*. When this view was taken, the phenomenon of constant ratio in such a chemical reaction as the above, could be explained by saying that the atom of sulphur possessed the power of combining with two atoms of hydrogen, and with four of oxygen, but with no more. The result of this combination of atoms was then called a *molecule* of sulphuric acid—the molecule being the smallest possible particle of any given compound, just as the atom was held to be the smallest possible particle of any given element. The structure of the molecule and the proportions in which its constituent atoms were combined, were then embodied in the chemical symbol for sulphuric acid, H_2SO_4.

Then, in 1815, the English chemist, Prout, made observations which seemed to indicate an underlying relation between the atoms of the va-

rious elements themselves, and which tended, consequently, to revive the medieval dream of transmutation. He observed that, taking the weight of the atom of hydrogen, the lightest known substance, as 1, the weights of the atoms of many of the other elements worked out to whole numbers. Thus, the atom of oxygen appeared to be just 16, and the atom of mercury just 200, times as heavy as the atom of hydrogen. It seemed reasonable to Prout, therefore, that oxygen might not be oxygen, nor mercury, mercury, but that both might be hydrogen condensed 16 and 200 times respectively.

However, it was soon discovered that while the atomic weights of many of the elements worked out to whole numbers, many, also, worked out to fractional numbers; consequently, Prout's explanation had to be abandoned.

A little later, however, Dobereiner discovered that here and there in the list of elements little groups could be picked out, each member of which bore strongly similar properties. Thus, calcium, strontium and barium, all greatly alike, fell into one group; chlorine, bromine and iodine formed a second; and sulphur, selenium and tellurium, a third. These elements, it was observed, tended to form the same compounds; where their combining ratios varied they varied with a perfect regularity.

Then, in 1863, Newlands pointed out that if the elements were written in the order of their atomic weights, beginning with hydrogen, 1, and ending with uranium, 240, those elements possessing strongly similar properties fell, like the octave notes in music, with just seven elements in between. This observation contained the germ of a most important discovery—the discovery of what is known as the *Periodic Law.* It was arrived at independently, and almost simultaneously, by Mendeléeff in Russia, and Meyer in Germany.

These two scientists discovered that the properties exhibited by the elements are *periodic functions of their atomic weights,* which, in simple language, means that chemical characteristics of the various substances periodically recur as the weight of their respective atoms increases.

It now became obvious to the more philosophical investigators that there was, in fact, an underlying relation between the atoms of the various elements, just as Prout had suspected. It was apparent, also, since this relation was a numerical relation, and since some of the atoms bore a fractional aspect, that the existence of something yet smaller than the atom must be postulated—something out of which the atoms themselves could be built up—in order to satisfy the conditions imposed by the Periodic Law.

The honor of discovering these infinitely minute particles, however, did not go to the chemists, but to the physicists, who first detected them by means of the electroscope.

The electroscope is an extremely sensitive, yet simple apparatus. It consists of two strips of gold-foil attached to the end of a metallic rod which in turn is thrust through the stopper of a glass jar so that the leaves hang inside. Now, when an electrically charged body is brought in proximity to the metallic rod, an electrical charge is communicated through the rod to the leaves. These, being similarly electrified, are repelled from one another and stand apart at an angle—the amount of the angle measuring the amount of the communicated charge.

Now, in experiments with the electroscope, it was discovered that air, ordinarily a very poor conductor of electricity, became a very excellent conductor after having been in the proximity of a candle-flame. It then possessed the power of discharging an electroscope, causing the gold leaves to collapse. Nor was a candle-flame the only agent that would affect the air in this fashion; it was soon observed that contact with glowing metals, or with metals exposed to the action of ultra-violet light, imparted a similar property. An electrical discharge would also render the surrounding air a conductor, and this conductivity

remained after the discharge had ceased. The mere presence of certain elements produced a like effect: it was even found that the simple expedient of bubbling it through water gave air the power to disperse an electrostatic charge. In fact, it was found that "all forms of matter under special conditions and special forms of matter under all conditions" affected the air in this fashion.

But, and what was more striking still, this acquired conductivity could be removed by passing the air through some adequate filter, such as a wad of glass wool.

Obviously there was something in the air—something given off by the forms of matter with which it had come in contact—something in the nature of particles since filtration would remove it—that was responsible for the phenomenon. In this way the gaseous *ions* were discovered.

Subsequently, experiments with positively and negatively charged electroscopes revealed the fact that the ions were of two kinds—one possessing the power to disperse a negative charge of static electricity, and which, therefore, were themselves positively charged; and a kind possessing the power to disperse a positive charge, and which, therefore, were negatively electrified. The positive ions are still called ions. About them very little is known save that they betray a positive

electrical nature; that they possess little or no mass at all, but that they appear, nevertheless, to be about the size of the atom of hydrogen, which is the unit of chemistry. Concerning the negative ion, however, quite a good deal is known, and because of the importance it has assumed it has been given a special name. It is now called the *corpuscle.*

The reason so much is known about the corpuscle is that a beam of these tiny particles, emanating from a heated metal plate, or shot from the cathode of a Crookes tube, or derived from any source whatever, can be bent by magnetic stresses. With refined and highly sensitive apparatus scientists have deflected such a beam, by the application of known magnetic forces, through an arc which could easily be measured. And, with the amount of the deflecting force and the radius of the resulting arc known, it was possible to calculate the velocity with which the corpuscles traveled. This was found to be prodigious, approximating at times as much as half the speed of light, or, roughly, 90,000 miles per second.

Next, the electrical charge carried by each corpuscle was determined—a calculation which its peculiar property of forming clouds in moist air rendered possible. And when the velocity and the electrical charge had been found, the *mass* of the corpuscle could be worked out. This, no mat-

ter from what source the corpuscle was derived, turned out to be a constant quantity: it possesses, roughly, a mass 1,000 times less than that of the hydrogen atom.

Thus, in the corpuscle, physicists discovered that of which the chemists stood in need—they discovered a particle 1,000 times smaller than the smallest atom, out of which all atoms, and consequently all matter, might be built up; and which, if this were the case, might easily invest each element with a numerical relation to its neighbor. But were the atoms of the elements built up out of these tiny, negatively charged particles?

This question was answered by the discovery of radium. Radium is an element, fitting nicely into its place in the *Table of Elements* with an atomic weight of 226.4. It possesses, moreover, wonderful dynamic properties, for it continually emits energy at a rate that is stupendous when compared with its mass. This energy takes several forms. It appears as heat, and this heat is sufficient to keep the temperature of a specimen of radium salts several degrees above that of surrounding objects: it appears also as motion—motion which is communicated to the surrounding ether, and which gives rise to rays resembling in many respects those emitted by the Röntgen, or X-ray bulb. All of these properties are summed

up under the general heading of *radio-activity*.

At the time of its discovery the phenomenon of radio-activity could be accounted for only upon the supposition of atomic disintegration. It appeared as though the atoms of radium were like time-bombs: at a certain predetermined moment they seemed to explode, releasing thereby vast stores of intra-atomic energy. With this supposition in mind, M. Henri Becquerel, the original discoverer, not of radium, but of radio-activity, determined, to analyze the radium rays. This he accomplished by subjecting them to magnetic torsion.

Under the action of a powerful electro-magnet M. Becquerel found that the rays emitted by a specimen of radium salts became split up into two beams. One beam appeared to be unaffected by the magnetic stress; the other was greatly deflected. This latter and easily deflected portion, M. Becquerel called the *beta-ray*.

Subsequently, Professor Rutherford, by the application of tremendous magnetic fields, succeeded in splitting the former, and hitherto undeflected, portion of the beam up into two parts, one of which was deflected and one of which was not. This second deflected portion, however, was not attracted towards the magnetic pole as the beta-ray had been, but was repelled from it. This was called the *alpha-ray*. The residual ray,

which refused to deviate from its course, was called the *gamma-ray.*

Yet further investigation by means of the electroscope revealed the fact that the beta-ray was nothing more nor less than a beam of negatively charged corpuscles, identical with those emitted by candle-flames, by hot metals, and by the cathodes of vacuum tubes. The alpha-ray, on the other hand, was found to consist of positively charged ions; while the third and undeflected gamma-ray appeared to be wave motions set up in the ether by the vibrations of ion and corpuscle.

Thus it was shown that the element radium, at least, was composed at last analysis of ions and corpuscles; and in 1904 this proof was extended to another element—one which betrayed no radio-active properties whatever. This occurred in the following manner:

It was observed that substances left in the neighborhood of radium themselves acquired a quasi-radio-activity. Investigation showed that this was due to something given off by the radium—something distinguished from the rays mentioned above by the fact that it behaved in every particular, not like a ray, but like a gas. This was called the *radium emanation.* And in the summer of 1904 Sir William Ramsey and Mr. Soddy determined to make a spectroscopic analysis of air containing this emanation. At first they dis-

covered lines in the spectrum which they attributed to the emanation; after the instrument had been allowed to stand for several hours, however, the spectrum of *helium,* clear and well-defined, appeared.

Helium is an element with an atomic weight of 4. It was discovered some thirty years ago in the sun. Later it was found to exist in small quantities upon earth.

Here, then, was the dream of the medieval alchemist come true; here was one element, radium, with an atomic weight of 226.4, transmuting itself into another, helium, whose atomic weight was only 4. And, obviously, both radium and helium were composed of ions and corpuscles.

Now it is from the consideration of such phenomena that scientists have put forward the *Corpuscular Theory* of matter. This theory does not involve the abandonment, but merely the extension, of the Atomic Theory. For the Corpuscular Theory views all matter simply as an agglomeration of corpuscles, the difference between an atom of hydrogen and an atom of mercury being only a difference in number between their constituent parts. Upon this basis, therefore, the hydrogen atom, whose corrected weight is 1.008, would consist of 1,008 corpuscles: the atom of mercury, however, whose weight is 200, would consist of 200,000.

But it will be remembered that the corpuscles are all negatively charged, and a number of similarly charged bodies cannot remain in a state of equilibrium unless they be associated with an equal and opposite charge. And in the economy of the atom the positive charge, necessary to the stability of the structure, is supplied by the ion, which, it will be remembered, possesses no appreciable mass, and which may best be described as *a sphere of positive electrification.*

Professor J. J. Thompson has shown how, upon mathematical grounds, the corpuscles would arrange themselves within this positive sphere; and Professor Mayer has worked out a beautiful analogue with floating magnets. The result of these calculations and experiments have been to invest the atom with a structure in every way analagous to that of the solar system, in which the corpuscles in rapid orbital motion correspond to the planets, and in which the enclosing sphere of positive electrification corresponds to the centripetal pull of gravity.

Now, if we accept the usual definition of matter as *that which possesses mass,* it is apparent from the foregoing that only one of the constituent parts of matter conforms to the test of materiality. This is the corpuscle; the ion is simply a sphere of influence.

However, as far back as 1881, Professor

Thompson pointed out that a charge of electricity in motion sets up a *drag* in the ether through which it moves—just as the armature of a dynamo sets up a drag in its magnetic field, which makes it increasingly difficult to turn. This drag, or resistance to motion, makes the charge appear to possess inertia, weight or mass, which is a characteristic of matter. Subsequently, Sir Oliver Lodge calculated how much this increase in inertia would be in a body of given mass, and carrying a given electrical charge, at varying speeds. He found that at half the speed of light, which travels at the rate of 186,000 miles per second, this apparent increase in mass would be equal to .12 of the body's actual mass when in a state of rest. At .9 the speed of light the body would behave as though it were 1.8 times as heavy, while at 99 per cent of the speed of light its mass would appear to be 3.28 times as great. At 99.5 per cent, this number jumped suddenly to 5; and between 99.5 per cent and the actual speed of light, it jumped from 5 to —— infinity.

From the foregoing it is obvious that no particle of matter can ever attain a speed greater than that of light for, though it were only the size of a corpuscle when it started, if it be conceived of as attaining a speed greater than that of light, it must be conceived of, also, as having acquired a mass greater than that of the universe.

Now in 1881 these findings of Professor Thompson and of Sir Oliver Lodge caused little comment, for then no particles of matter were known which any where nearly approximated such enormous velocities. Since then, however, they have been discovered in the corpuscle, which attains at times a speed of 90,000 miles per second.

When this discovery was made a startling idea flashed across the intellectual horizon, for it suddenly occurred to scientists that perhaps the *entire* mass of the corpuscle, itself the only material element in matter, might be due to nothing in the world but to its electrical charge and to its motion. This consideration has given rise to what is called the *Electronic Theory* of matter.

The Electronic Theory does not involve the abandonment either of the Atomic or the Corpuscular theories; it does not contradict, but includes both. Its distinguishing characteristic is that it views the mass of the corpuscle as due entirely to its motion and to its charge. If this view be correct, it means that every element, and consequently that all matter, is nothing more nor less than electrical and motional conditions subsisting in the primary ether.

Now, in arriving at the Electronic Theory, the science of the past decade has made many secondary, but none the less important, deductions.

The chief of these has resulted in the extension of the *Evolutionary Hypothesis* so as to include not only the organic, but the inorganic world as well—a view to which the work of Sir Norman Lockyer in astro-physics largely contributed.

Sir Norman Lockyer discovered, through spectroscopic analysis of the fixed stars, that the chemical constitution of the heavenly bodies varied directly as their temperature. In the cooler stars many of the heavier elements which are common upon earth were present. As the temperature rose to that of the greater suns, however, the chemical constitution became less complex, until, in the very hottest, only the lightest elements such as hydrogen, and a form of hydrogen known as *proto-hydrogen*, appeared. This seemed to indicate that as the temperature rose or fell, element was evolved from element, just as in the biological world species is evolved from species, and just as in the laboratory helium is evolved from radium.

Sir Norman Lockyer, however, as well as all of those distinguished physicists whose work has given us the Corpuscular and the Electronic theories, assumed, apparently without question that the Helmholzian theory of the *Conservation of Energy* was correct. This theory postulates that there is a fixed amount of energy in the universe, which, although it may be converted

from one form into another until it is diffused as radiations of heat, can, notwithstanding, never be augmented or diminished by so much as the millionth part of a calory.

Laboring under the spell of such an assumption the result was unavoidable: all of these men contemplated a dying universe—a universe in which the fixed amount of energy doled out at some supposititious and far-off creation, was being, not destroyed, but dissipated beyond usefulness by radiation into outer space. The sun, they argued, is continually giving up heat: therefore one day it will grow cold. Many of them went so far as to calculate how long the celestial furnace would hold out, and thus fixed an approximate date upon which our own solar system would pass into a state of eternal stagnation. Thus it was that Sir Norman Lockyer, apparently, assumed that the order of evolution among the stars was from the extremely hot to the extremely cold.

Now the only point that is of interest to us at the present moment is this: the Theory of Conservation, upon which the entire structure of 19th century physics rested, is to-day being subjected to the most critical scrutiny—and largely through the work of American scientists.

The heavy guns of reason were first turned upon it when the Frenchman, Babinet, definitely

exploded the La Placian theory of the origin of worlds. For, although Helmholz did not formulate the Theory of Conservation until after La Place's *Nebula Hypothesis* had been advanced, the Nebula Hypothesis, nevertheless, presupposed the Law of Conservation.

According to La Place who, by the way, is said never fully to have accepted his own explanation, the solar system originated in a vast, incandescent nebula. This nebula, losing heat by radiation, contracted, and finally condensed into a central sun surrounded by a family of growing planets. As cooling continued, the supposition was that the planets—at least the planet Earth—became habitable, and that life appeared. The heat of the central body was, therefore, due to its primordial state of incandescence: its future, therefore, was the future of a dark and icy star.

In 1861, however, Babinet took the calculated and combined mass of the sun and his attendant worlds, and expanded it into a sphere with a radius equal to the radius of Neptune's orbit. Neptune, the outermost planet, revolves at the enormous distance of 2,791,600,000 miles from the sun. And when the available material had been spread out over this huge space, Babinet discovered that the average density of so tenuous a body was somewhat less than that of the most

perfect vacuum that can be obtained, and that, consequently, its mean temperature, instead of approximating incandescence, approximated much more nearly the absolute zero of outer space.

Thus it is that modern astronomers—Professor See, among others—declare the Nebula Hypothesis to be untenable, despite the fact that it provided the basis for collegiate text-books until as late as 1912.

Coincidentally with the passing of the Nebula Hypothesis among astronomers, comes a tendency upon the part of the younger physicists seriously to question the Law of Conservation, which it unconsciously presupposed.

These men by no means contemplate a dying universe, or a sun growing cold through the loss of heat. On the contrary, they view the production of radiant energy as a *condition of matter when matter is agglomerated in large masses.* The sun, they say, is hot, not by virtue of some primordial incandescence, nor by virtue of subsequent contraction as some have supposed, but purely and simply by virtue of his own immense mass. His heat, they hold, is evolved from moment to moment, partially, perhaps, by the impact of infalling meteoric material, but principally by the pressure of his outer upon his inner layers—just as they hold that the inner heat of

the earth arises from the pressure of the crust upon the interior. This heat has been termed *gravistatic heat;* the energy which produces it is not the energy of motion, but the energy of position—not the energy of impact, which is dissipated in heat the moment that motion is arrested, but the energy of pressure, which is continuous impact. Now the point to be noted is that the heat resulting from pressure cannot give out, for the simple reason that as long as pressure continues, just so long is heat being evolved.

Upon this basis, therefore, all dark stars and "dead" planets are not dead, if the term implies a former loss of heat. On the contrary they are hotter now than they ever have been; and if, through the accretion of material, they should one day acquire sufficient mass, they will burst suddenly into flame, fused by their own great weight.

Such a conception as the above, which views the entire amount of energy in the universe as being expended every moment, and every moment as being thoroughly and completely renewed, is a far cry from the Theory of Conservation, which has sapped the life-blood of science for half a century.

And possibly within the next few years, this same conception will supplant the now generally accepted theory of atomic disintegration as the explanation of radio-activity, for, by referring to

the Table of Elements, it will be observed that the radio-active substances are, atom for atom, the densest known forms of matter. Should this occur, scientists would then postulate that *a condition of radiant activity is a function of mass.* It will be most interesting to see.

Now, before quitting the Law of Conservation, the author wishes to call attention to the intellectual process by which these latter day thinkers are, apparently, arriving at the conception of a self-maintaining, self-evolving universe, as distinguished from the dying universe of the 19th century.

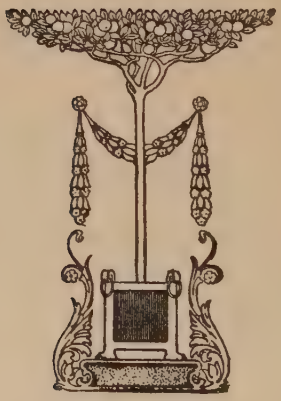
It is, of course, obvious that no work is possible unless there be a *difference in potential.* The sun is hotter than the earth: this difference in temperature constitutes the difference in potential which has given rise to all the forms of life, and to all the particular manifestations of energy, with which we are familiar. Then, since all forms and all manifestations of energy are, according to the Electronic Theory, conditions subsisting in primary ether, it is obvious that we must concede to ether itself the ability to alter its own equilibrium, and to establish within itself differences in potential. Now, when we are dealing in terms of Nature, it is purely academic and unwarranted to conceive of a natural law as operative at one time and not at another. Yet this is precisely

what the thinkers of the last century did. They perceived that differences in potential existed, but conceived of the cause which produced those differences as operative only at the time of a far-off beginning. To-day, however, we recognize the fact that if we conceive of a natural law at all, we must conceive of it as being operative, like the law of gravitation, *at every moment of time.* Consequently, we cannot avoid the inference that to establish and to maintain differences in potential between her constituent parts, is a quality inherent in Nature, and as universal as the ether itself.

It is, doubtless, some such necessity as the above that is to-day leading scientists to discard the idea of a cooling sun, and to conceive of a sun hot by virtue of his own mighty efforts—a sun to whom the intense cold of outer space is the necessary negative pole of the battery—not enemy, but wife.

If this view be adopted, and be transferred from the solar system to the atom, we have three elements entering into its structure. One of these we shall call x, or that which maintains that purely local difference in potential, between positive ion and negative corpuscle, by virtue of which the atom exists, and which, therefore, manifests as the orbital motion of the corpuscles, and in radio-active bodies as the gamma-ray. The

other two are the ion and the corpuscle themselves. If, however, the atom be expanded by a process of evolution into the man, these elements become an *originative element,* a *receptive and executive element,* and a *physical instrument.**



**For a more detailed discussion of these theories, see* The New Knowledge; *R. K. Duncan; and* From Nebula to Nebula; *G. H. Lepper.*

Psychanalysis; A. A. Brill.

On Dreams; Sigmund Freud.

The Psychopathology of Everyday Life; Sigmund Freud.

Human Personality; F. W. H. Myers.

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Decline and Fall of the Roman Empire (Chapter LIV); Edward Gibbon.

The Edinburgh Lectures; T. Troward.

Bible Mystery and Bible Meaning; T. Troward.

The Golden Bough; J. G. Frazer.

Biography and Discoveries of T. J. J. See; W. L. Webb.

The New Knowledge; Robert Kennedy Duncan.

From Nebula to Nebula; George Henry Lepper.

The Earth: Its Origin and Evolution; A. T. Swaine.

Growth of the English Drama from the Liturgy of the Church; Mary Angelique.

Greek and English Tragedy; Gilbert Murray.

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